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<120> Methods of Screening for Compounds that Modulate the
LSR-Leptin Interaction and Their Use in the Prevention
and Treatment of Obesity-Related Diseases

<130> 70.WO1

<150> 60/155,506

<151> 1999-09-22

<160> 106

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gag tgc cag gac agc gtg cgc acc gtc agg gtc gtg gcc acc aag cag	643
Glu Cys Gln Asp Ser Val Arg Thr Val Arg Val Val Ala Thr Lys Gln	
165 170 175 180	
ggc aac gct gtg acc ctg gga gat tac tac cag ggc cgg agg att acc	691
Gly Asn Ala Val Thr Leu Gly Asp Tyr Tyr Gln Gly Arg Arg Ile Thr	
185 190 195	
atc acc gga aat gct gac ctg acc ttt gac cag acg gcg tgg ggg gac	739
Ile Thr Gly Asn Ala Asp Leu Thr Phe Asp Gln Thr Ala Trp Gly Asp	
200 205 210	
agt ggt gtg tat tac tgc tcc gtg gtc tca gcc cag gac ctc cag ggg	787
Ser Gly Val Tyr Tyr Cys Ser Val Val Ser Ala Gln Asp Leu Gln Gly	
215 220 225	
aac aat gag gcc tac gca gag ctc atc gtc ctt ggg agg acc tca ggg	835
Asn Asn Glu Ala Tyr Ala Glu Leu Ile Val Leu Gly Arg Thr Ser Gly	
230 235 240	
gtg gct gag ctc tta cct ggt ttt cag gcg ggg ccc ata gaa gac tgg	883
Val Ala Glu Leu Leu Pro Gly Phe Gln Ala Gly Pro Ile Glu Asp Trp	
245 250 255 260	
ctc ttc gtg gtt gtg gta tgc ctg gct gcc ttc ctc atc ttc ctc ctc	931
Leu Phe Val Val Val Val Cys Leu Ala Ala Phe Leu Ile Phe Leu Leu	
265 270 275	
ctg ggc aty tgc tgg tgc cag tgc tgc ccg cac act tgc tgc tgc tac	979
Leu Gly Ile Cys Trp Cys Gln Cys Cys Pro His Thr Cys Cys Cys Tyr	
280 285 290	
gtc agg tgc ccc tgc tgc cca gac aag tgc tgc tgc ccc gag gcc ctg	1027
Val Arg Cys Pro Cys Cys Pro Asp Lys Cys Cys Cys Pro Glu Ala Leu	
295 300 305	
tat gcc gcc ggc aaa gca gcc acc tca ggt gtt ccc agc att tat gcc	1075
Tyr Ala Ala Gly Lys Ala Ala Thr Ser Gly Val Pro Ser Ile Tyr Ala	
310 315 320	
ccc agc acc tat gcc cac ctg tct ccc gcc aag acc cca ccc cca cca	1123
Pro Ser Thr Tyr Ala His Leu Ser Pro Ala Lys Thr Pro Pro Pro Pro	
325 330 335 340	

gct atg att ccc atg ggc cct gcc tac aac ggg tac cct gga gga tac	1171
Ala Met Ile Pro Met Gly Pro Ala Tyr Asn Gly Tyr Pro Gly Gly Tyr	
345 350 355	
cct gga gac gtt gac agg art agc tca gct ggt ggc caa ggc tcc tat	1219
Pro Gly Asp Val Asp Arg Xaa Ser Ser Ala Gly Gly Gln Gly Ser Tyr	
360 365 370	
gta ccc ctg ctt cgg gac acg gac agc agt gtg gcc tct gaa gtc cgc	1267
Val Pro Leu Leu Arg Asp Thr Asp Ser Ser Val Ala Ser Glu Val Arg	
375 380 385	
agt ggc tac agg att cag gcc agc cag cag gac gac tcc atg cgg gtc	1315
Ser Gly Tyr Arg Ile Gln Ala Ser Gln Gln Asp Asp Ser Met Arg Val	
390 395 400	
ctg tac tac atg gag aag gag ctg gcc aac ttc gac cct tct cga cst	1363
Leu Tyr Tyr Met Glu Lys Glu Leu Ala Asn Phe Asp Pro Ser Arg Xaa	
405 410 415 420	
ggc ccc ccc agt ggc cgt gtg gag cgg gcc atg agt gaa gtc acc tcc	1411
Gly Pro Pro Ser Gly Arg Val Glu Arg Ala Met Ser Glu Val Thr Ser	
425 430 435	
ctc cac gag gac gac tgg cga tct cgg cct tcc cgg ggc cct gcc ctc	1459
Leu His Glu Asp Asp Trp Arg Ser Arg Pro Ser Arg Gly Pro Ala Leu	
440 445 450	
acc ccg atc cgg gat gag gag tgg ggt ggc cac tcc ccc cgg agt ccc	1507
Thr Pro Ile Arg Asp Glu Glu Trp Gly Gly His Ser Pro Arg Ser Pro	
455 460 465	
agg gga tgg gac cag gag ccc gcc agg gag cag gca ggc ggg ggc tgg	1555
Arg Gly Trp Asp Gln Glu Pro Ala Arg Glu Gln Ala Gly Gly Gly Trp	
470 475 480	
cgg gcc agg cgg ccc cgg gcc cgc tcc gtg gac gcc ctg gac gac ctc	1603
Arg Ala Arg Arg Pro Arg Ala Arg Ser Val Asp Ala Leu Asp Asp Leu	
485 490 495 500	
acc ccg ccg agc acc gcc gag tca ggg agc agg tct ccc acg agt aat	1651
Thr Pro Pro Ser Thr Ala Glu Ser Gly Ser Arg Ser Pro Thr Ser Asn	
505 510 515	
ggt ggg aga agc cgg gcc tac atg ccc ccg cgg agc cgc agc cgg gac	1699
Gly Gly Arg Ser Arg Ala Tyr Met Pro Pro Arg Ser Arg Ser Arg Asp	
520 525 530	
gac ctc tat gac caa gac gac tcg agg gac ttc cca cgc tcc cgg gac	1747
Asp Leu Tyr Asp Gln Asp Asp Ser Arg Asp Phe Pro Arg Ser Arg Asp	
535 540 545	
ccc cac tac gac gac ttc agg tct cgg gag cgc cct cct gcc gac ccc	1795
Pro His Tyr Asp Asp Phe Arg Ser Arg Glu Arg Pro Pro Ala Asp Pro	
550 555 560	
agg tcc cac cac cac cgt acc cgg gac cct cgg gac aac ggc tcc agg	1843
Arg Ser His His His Arg Thr Arg Asp Pro Arg Asp Asn Gly Ser Arg	
565 570 575 580	
tcc ggg gac ctc ccc tat gat ggg cgg cta ctg gag gag gct gtg agg	1891
Ser Gly Asp Leu Pro Tyr Asp Gly Arg Leu Leu Glu Glu Ala Val Arg	
585 590 595	
aag aag ggg tcg gag gag agg agg aga ccc cac aag gag gag gag gaa	1939
Lys Lys Gly Ser Glu Glu Arg Arg Arg Pro His Lys Glu Glu Glu Glu	
600 605 610	
gag gcc tac tac ccg ccc gcg ccg ccc ccg tac tcg gag acc gac tcg	1987
Glu Ala Tyr Tyr Pro Pro Ala Pro Pro Pro Tyr Ser Glu Thr Asp Ser	
615 620 625	
cag gcg tcc cga gag cgc agg ctc aag aag aac ttg gcc ctg agt cgg	2035
Gln Ala Ser Arg Glu Arg Arg Leu Lys Lys Asn Leu Ala Leu Ser Arg	
630 635 640	
gaa agt tta gtc gtc tga tctgacgttt tctacgtagc ttttgkattt	2083
Glu Ser Leu Val Val *	
645 650	
tttttttttaa tttgaaggaa cactgatgaa gccctgccat acccctcccg agtctaataa	2143
aacgtataat cacaa	2158

<210> 3
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 <213> Homo sapiens

<220>
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 <222> 363
 <223> 9-7-325 : polymorphic amino acid Ser or Asn

<220>
 <221> VARIANT
 <222> 420
 <223> 9-9-246 : polymorphic amino acid Pro or Arg

<220>
 <221> VARIANT
 <222> 519
 <223> LSRX9f13-BM : polymorphic amino acid deletion of Arg

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 20 25 30
 Arg Tyr Phe Gly Arg Asp Ala Arg Ala Arg Arg Ala Gln Thr Ala Ala
 35 40 45
 Met Ala Leu Leu Ala Gly Gly Leu Ser Arg Gly Leu Gly Ser His Pro
 50 55 60
 Ala Ala Ala Gly Arg Asp Ala Val Val Phe Val Trp Leu Leu Leu Ser
 65 70 75 80
 Thr Trp Cys Thr Ala Pro Ala Arg Ala Ile Gln Val Thr Val Ser Asn
 85 90 95
 Pro Tyr His Val Val Ile Leu Phe Gln Pro Val Thr Leu Pro Cys Thr
 100 105 110
 Tyr Gln Met Thr Ser Thr Pro Thr Gln Pro Ile Val Ile Trp Lys Tyr
 115 120 125
 Lys Ser Phe Cys Arg Asp Arg Ile Ala Asp Ala Phe Ser Pro Ala Ser
 130 135 140
 Val Asp Asn Gln Leu Asn Ala Gln Leu Ala Ala Gly Asn Pro Gly Tyr
 145 150 155 160
 Asn Pro Tyr Val Glu Cys Gln Asp Ser Val Arg Thr Val Arg Val Val
 165 170 175
 Ala Thr Lys Gln Gly Asn Ala Val Thr Leu Gly Asp Tyr Tyr Gln Gly
 180 185 190
 Arg Arg Ile Thr Ile Thr Gly Asn Ala Asp Leu Thr Phe Asp Gln Thr
 195 200 205
 Ala Trp Gly Asp Ser Gly Val Tyr Tyr Cys Ser Val Val Ser Ala Gln
 210 215 220
 Asp Leu Gln Gly Asn Asn Glu Ala Tyr Ala Glu Leu Ile Val Leu Gly
 225 230 235 240
 Arg Thr Ser Gly Val Ala Glu Leu Leu Pro Gly Phe Gln Ala Gly Pro
 245 250 255
 Ile Glu Asp Trp Leu Phe Val Val Val Val Cys Leu Ala Ala Phe Leu
 260 265 270
 Ile Phe Leu Leu Gly Ile Cys Trp Cys Gln Cys Cys Pro His Thr
 275 280 285
 Cys Cys Cys Tyr Val Arg Cys Pro Cys Cys Pro Asp Lys Cys Cys Cys
 290 295 300
 Pro Glu Ala Leu Tyr Ala Ala Gly Lys Ala Ala Thr Ser Gly Val Pro
 305 310 315 320
 Ser Ile Tyr Ala Pro Ser Thr Tyr Ala His Leu Ser Pro Ala Lys Thr
 325 330 335

Pro Pro Pro Pro Ala Met Ile Pro Met Gly Pro Ala Tyr Asn Gly Tyr
 340 345 350
 Pro Gly Gly Tyr Pro Gly Asp Val Asp Arg Ser Ser Ser Ala Gly Gly
 355 360 365
 Gln Gly Ser Tyr Val Pro Leu Leu Arg Asp Thr Asp Ser Ser Val Ala
 370 375 380
 Ser Glu Val Arg Ser Gly Tyr Arg Ile Gln Ala Ser Gln Gln Asp Asp
 385 390 395 400
 Ser Met Arg Val Leu Tyr Tyr Met Glu Lys Glu Leu Ala Asn Phe Asp
 405 410 415
 Pro Ser Arg Pro Gly Pro Pro Ser Gly Arg Val Glu Arg Ala Met Ser
 420 425 430
 Glu Val Thr Ser Leu His Glu Asp Asp Trp Arg Ser Arg Pro Ser Arg
 435 440 445
 Gly Pro Ala Leu Thr Pro Ile Arg Asp Glu Glu Trp Gly Gly His Ser
 450 455 460
 Pro Arg Ser Pro Arg Gly Trp Asp Gln Glu Pro Ala Arg Glu Gln Ala
 465 470 475 480
 Gly Gly Gly Trp Arg Ala Arg Arg Pro Arg Ala Arg Ser Val Asp Ala
 485 490 495
 Leu Asp Asp Leu Thr Pro Pro Ser Thr Ala Glu Ser Gly Ser Arg Ser
 500 505 510
 Pro Thr Ser Asn Gly Gly Arg Ser Arg Ala Tyr Met Pro Pro Arg Ser
 515 520 525
 Arg Ser Arg Asp Asp Leu Tyr Asp Gln Asp Asp Ser Arg Asp Phe Pro
 530 535 540
 Arg Ser Arg Asp Pro His Tyr Asp Asp Phe Arg Ser Arg Glu Arg Pro
 545 550 555 560
 Pro Ala Asp Pro Arg Ser His His His Arg Thr Arg Asp Pro Arg Asp
 565 570 575
 Asn Gly Ser Arg Ser Gly Asp Leu Pro Tyr Asp Gly Arg Leu Leu Glu
 580 585 590
 Glu Ala Val Arg Lys Lys Gly Ser Glu Glu Arg Arg Arg Pro His Lys
 595 600 605
 Glu Glu Glu Glu Ala Tyr Tyr Pro Pro Ala Pro Pro Pro Tyr Ser
 610 615 620
 Glu Thr Asp Ser Gln Ala Ser Arg Glu Arg Arg Leu Lys Lys Asn Leu
 625 630 635 640
 Ala Leu Ser Arg Glu Ser Leu Val Val
 645

<210> 4

<211> 2101

<212> DNA

<213> Homo sapiens

<220>

<221> allele

<222> 595

<223> 9-3-324 : polymorphic base C or T

<220>

<221> allele

<222> 883

<223> 9-6-187 : polymorphic base C or T

<220>

<221> allele

<222> 1134

<223> 9-7-325 : polymorphic base A or G

<220>

<221> allele

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<222> 1305
<223> 9-9-246 : polymorphic base G or C

<220>
<221> allele
<222> 1601
<223> LSRX9f13-BM : polymorphic base deletion of AGG

<220>
<221> allele
<222> 2022
<223> LSRX9f14-BM : polymorphic base T or G

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atgcccttgg tccacgtcgt ttacgctcat taaaacttcc aga atg caa cag gac 115
                                     Met Gln Gln Asp
                                     1

gga ctt gga gta ggg aca agg aac gga agt ggg aag ggg agg agc gtg 163
Gly Leu Gly Val Gly Thr Arg Asn Gly Ser Gly Lys Gly Arg Ser Val
5                                     10                                     15                                     20

cac ccc tcc tgg cct tgg tgc gcg ccg cgc ccc cta agg tac ttt gga 211
His Pro Ser Trp Pro Trp Cys Ala Pro Arg Pro Leu Arg Tyr Phe Gly
25                                     30                                     35

agg gac gcg cgg gcc aga cgc gcc cag acg gcc gcg atg gcg ctg ttg 259
Arg Asp Ala Arg Ala Arg Arg Ala Gln Thr Ala Ala Met Ala Leu Leu
40                                     45                                     50

gcc ggc ggg ctc tcc aga ggg ctg ggc tcc cac ccg gcc gcc gca ggc 307
Ala Gly Gly Leu Ser Arg Gly Leu Gly Ser His Pro Ala Ala Ala Gly
55                                     60                                     65

cgg gac gcg gtc gtc ttc gtg tgg ctt ctg ctt agc acc tgg tgc aca 355
Arg Asp Ala Val Val Phe Val Trp Leu Leu Leu Ser Thr Trp Cys Thr
70                                     75                                     80

gct cct gcc agg gcc atc cag gtg acc gtg tcc aac ccc tac cac gtg 403
Ala Pro Ala Arg Ala Ile Gln Val Thr Val Ser Asn Pro Tyr His Val
85                                     90                                     95                                     100

gtg atc ctc ttc cag cct gtg acc ctg ccc tgt acc tac cag atg acc 451
Val Ile Leu Phe Gln Pro Val Thr Leu Pro Cys Thr Tyr Gln Met Thr
105                                     110                                     115

tcg acc ccc acg caa ccc atc gtc atc tgg aag tac aag tct ttc tgc 499
Ser Thr Pro Thr Gln Pro Ile Val Ile Trp Lys Tyr Lys Ser Phe Cys
120                                     125                                     130

cgg gac cgc atc gcc gat gcc ttc tcc ccg gcc agc gtc gac aac cag 547
Arg Asp Arg Ile Ala Asp Ala Phe Ser Pro Ala Ser Val Asp Asn Gln
135                                     140                                     145

ctc aat gcc cag ctg gca gcc ggg aac cca ggc tac aac ccc tac gty 595
Leu Asn Ala Gln Leu Ala Ala Gly Asn Pro Gly Tyr Asn Pro Tyr Val
150                                     155                                     160

gag tgc cag gac agc gtg cgc acc gtc agg gtc gtg gcc acc aag cag 643
Glu Cys Gln Asp Ser Val Arg Thr Val Arg Val Val Ala Thr Lys Gln
165                                     170                                     175                                     180

ggc aac gct gtg acc ctg gga gat tac tac cag ggc cgg agg att acc 691
Gly Asn Ala Val Thr Leu Gly Asp Tyr Tyr Gln Gly Arg Arg Ile Thr
185                                     190                                     195

atc acc gga aat gct gac ctg acc ttt gac cag acg gcg tgg ggg gac 739
Ile Thr Gly Asn Ala Asp Leu Thr Phe Asp Gln Thr Ala Trp Gly Asp
200                                     205                                     210

agt ggt gtg tat tac tgc tcc gtg gtc tca gcc cag gac ctc cag ggg 787
Ser Gly Val Tyr Tyr Cys Ser Val Ser Ala Gln Asp Leu Gln Gly
215                                     220                                     225

aac aat gag gcc tac gca gag ctc atc gtc ctt gac tgg ctc ttc gtg 835
Asn Asn Glu Ala Tyr Ala Glu Leu Ile Val Leu Asp Trp Leu Phe Val
230                                     235                                     240

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gtt gta tgc ctg gct gcc ttc ctc atc ttc ctc ctc ctg ggc aty	883
Val Val Val Cys Leu Ala Ala Phe Leu Ile Phe Leu Leu Leu Gly Ile	
245 250 255 260	
tgc tgg tgc cag tgc tgc ccg cac act tgc tgc tgc tac gtc agg tgc	931
Cys Trp Cys Gln Cys Cys Pro His Thr Cys Cys Tyr Val Arg Cys	
265 270 275	
ccc tgc tgc cca gac aag tgc tgc tgc ccc gag gcc ctg tat gcc gcc	979
Pro Cys Cys Pro Asp Lys Cys Cys Cys Pro Glu Ala Leu Tyr Ala Ala	
280 285 290	
ggc aaa gca gcc acc tca ggt gtt ccc agc att tat gcc ccc agc acc	1027
Gly Lys Ala Ala Thr Ser Gly Val Pro Ser Ile Tyr Ala Pro Ser Thr	
295 300 305	
tat gcc cac ctg tct ccc gcc aag acc cca ccc cca cca gct atg att	1075
Tyr Ala His Leu Ser Pro Ala Lys Thr Pro Pro Pro Pro Ala Met Ile	
310 315 320	
ccc atg ggc cct gcc tac aac ggg tac cct gga gga tac cct gga gac	1123
Pro Met Gly Pro Ala Tyr Asn Gly Tyr Pro Gly Gly Tyr Pro Gly Asp	
325 330 335 340	
gtt gac agg art agc tca gct ggt ggc caa ggc tcc tat gta ccc ctg	1171
Val Asp Arg Xaa Ser Ser Ala Gly Gly Gln Gly Ser Tyr Val Pro Leu	
345 350 355	
ctt cgg gac acg gac agc agt gtg gcc tct gaa gtc cgc agt ggc tac	1219
Leu Arg Asp Thr Asp Ser Ser Val Ala Ser Glu Val Arg Ser Gly Tyr	
360 365 370	
agg att cag gcc agc cag cag gac gac tcc atg cgg gtc ctg tac tac	1267
Arg Ile Gln Ala Ser Gln Gln Asp Asp Ser Met Arg Val Leu Tyr Tyr	
375 380 385	
atg gag aag gag ctg gcc aac ttc gac cct tct cga cst ggc ccc ccc	1315
Met Glu Lys Glu Leu Ala Asn Phe Asp Pro Ser Arg Xaa Gly Pro Pro	
390 395 400	
agt ggc cgt gtg gag cgg gcc atg agt gaa gtc acc tcc ctc cac gag	1363
Ser Gly Arg Val Glu Arg Ala Met Ser Glu Val Thr Ser Leu His Glu	
405 410 415 420	
gac gac tgg cga tct cgg cct tcc cgg ggc cct gcc ctc acc ccg atc	1411
Asp Asp Trp Arg Ser Arg Pro Ser Arg Gly Pro Ala Leu Thr Pro Ile	
425 430 435	
cgg gat gag gag tgg ggt ggc cac tcc ccc cgg agt ccc agg gga tgg	1459
Arg Asp Glu Glu Trp Gly Gly His Ser Pro Arg Ser Pro Arg Gly Trp	
440 445 450	
gac cag gag ccc gcc agg gag cag gca ggc ggg ggc tgg cgg gcc agg	1507
Asp Gln Glu Pro Ala Arg Glu Gln Ala Gly Gly Gly Trp Arg Ala Arg	
455 460 465	
cgg ccc cgg gcc cgc tcc gtg gac gcc ctg gac gac ctc acc ccg ccg	1555
Arg Pro Arg Ala Arg Ser Val Asp Ala Leu Asp Asp Leu Thr Pro Pro	
470 475 480	
agc acc gcc gag tca ggg agc agg tct ccc acg agt aat ggt ggg aga	1603
Ser Thr Ala Glu Ser Gly Ser Arg Ser Pro Thr Ser Asn Gly Gly Arg	
485 490 495 500	
agc cgg gcc tac atg ccc ccg cgg agc cgc agc cgg gac gac ctc tat	1651
Ser Arg Ala Tyr Met Pro Pro Arg Ser Arg Ser Arg Asp Asp Leu Tyr	
505 510 515	
gac caa gac gac tcc agg gac ttc cca cgc tcc cgg gac ccc cac tac	1699
Asp Gln Asp Asp Ser Arg Asp Phe Pro Arg Ser Arg Asp Pro His Tyr	
520 525 530	
gac gac ttc agg tct cgg gag cgc cct cct gcc gac ccc agg tcc cac	1747
Asp Asp Phe Arg Ser Arg Glu Arg Pro Pro Ala Asp Pro Arg Ser His	
535 540 545	
cac cac cgt acc cgg gac cct cgg gac aac ggc tcc agg tcc ggg gac	1795
His His Arg Thr Arg Asp Pro Arg Asp Asn Gly Ser Arg Ser Gly Asp	
550 555 560	
ctc ccc tat gat ggg cgg cta ctg gag gag gct gtg agg aag aag ggg	1843
Leu Pro Tyr Asp Gly Arg Leu Leu Glu Glu Ala Val Arg Lys Lys Gly	
565 570 575 580	

tcg gag gag agg agg aga ccc cac aag gag gag gag gaa gag gcc tac	1891
Ser Glu Glu Arg Arg Arg Pro His Lys Glu Glu Glu Glu Glu Ala Tyr	
585 590 595	
tac ccg ccc gcg ccg ccc ccg tac tcg gag acc gac tcg cag gcg tcc	1939
Tyr Pro Pro Ala Pro Pro Pro Tyr Ser Glu Thr Asp Ser Gln Ala Ser	
600 605 610	
cga gag cgc agg ctc aag aag aac ttg gcc ctg agt cgg gaa agt tta	1987
Arg Glu Arg Arg Leu Lys Lys Asn Leu Ala Leu Ser Arg Glu Ser Leu	
615 620 625	
gtc gtc tga tctgacgttt tctacgtagc ttttgkattt ttttttttaa	2036
Val Val *	
630	
tttgaaggaa cactgatgaa gccctgccat acccctcccg agtctaataa aacgtataat	2096
cacaa	2101

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 <212> PRT
 <213> Homo sapiens

<220>
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 <222> 344
 <223> 9-7-325 : polymorphic amino acid Ser or Asn

<220>
 <221> VARIANT
 <222> 401
 <223> 9-9-246 : polymorphic amino acid Pro or Arg

<220>
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 <222> 500
 <223> LSRX9f13-BM : polymorphic amino acid deletion of Arg

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 20 25 30
 Arg Tyr Phe Gly Arg Asp Ala Arg Ala Arg Arg Ala Gln Thr Ala Ala
 35 40 45
 Met Ala Leu Leu Ala Gly Gly Leu Ser Arg Gly Leu Gly Ser His Pro
 50 55 60
 Ala Ala Ala Gly Arg Asp Ala Val Val Phe Val Trp Leu Leu Leu Ser
 65 70 75 80
 Thr Trp Cys Thr Ala Pro Ala Arg Ala Ile Gln Val Thr Val Ser Asn
 85 90 95
 Pro Tyr His Val Val Ile Leu Phe Gln Pro Val Thr Leu Pro Cys Thr
 100 105 110
 Tyr Gln Met Thr Ser Thr Pro Thr Gln Pro Ile Val Ile Trp Lys Tyr
 115 120 125
 Lys Ser Phe Cys Arg Asp Arg Ile Ala Asp Ala Phe Ser Pro Ala Ser
 130 135 140
 Val Asp Asn Gln Leu Asn Ala Gln Leu Ala Ala Gly Asn Pro Gly Tyr
 145 150 155 160
 Asn Pro Tyr Val Glu Cys Gln Asp Ser Val Arg Thr Val Arg Val Val
 165 170 175
 Ala Thr Lys Gln Gly Asn Ala Val Thr Leu Gly Asp Tyr Tyr Gln Gly
 180 185 190
 Arg Arg Ile Thr Ile Thr Gly Asn Ala Asp Leu Thr Phe Asp Gln Thr
 195 200 205
 Ala Trp Gly Asp Ser Gly Val Tyr Tyr Cys Ser Val Val Ser Ala Gln

210	215	220
Asp Leu Gln Gly Asn Asn Glu Ala Tyr Ala Glu Leu Ile Val Leu Asp		
225	230	235
Trp Leu Phe Val Val Val Val Cys Leu Ala Phe Leu Ile Phe Leu		240
	245	250
Leu Leu Gly Ile Cys Trp Cys Gln Cys Cys Pro His Thr Cys Cys Cys		255
	260	265
Tyr Val Arg Cys Pro Cys Cys Pro Asp Lys Cys Cys Cys Pro Glu Ala		270
	275	280
Leu Tyr Ala Ala Gly Lys Ala Ala Thr Ser Gly Val Pro Ser Ile Tyr		285
	290	295
Ala Pro Ser Thr Tyr Ala His Leu Ser Pro Ala Lys Thr Pro Pro Pro		300
305	310	315
Pro Ala Met Ile Pro Met Gly Pro Ala Tyr Asn Gly Tyr Pro Gly Gly		320
	325	330
Tyr Pro Gly Asp Val Asp Arg Ser Ser Ser Ala Gly Gly Gln Gly Ser		335
	340	345
Tyr Val Pro Leu Leu Arg Asp Thr Asp Ser Ser Val Ala Ser Glu Val		350
	355	360
Arg Ser Gly Tyr Arg Ile Gln Ala Ser Gln Gln Asp Asp Ser Met Arg		365
	370	375
Val Leu Tyr Tyr Met Glu Lys Glu Leu Ala Asn Phe Asp Pro Ser Arg		380
385	390	395
Pro Gly Pro Pro Ser Gly Arg Val Glu Arg Ala Met Ser Glu Val Thr		400
	405	410
Ser Leu His Glu Asp Asp Trp Arg Ser Arg Pro Ser Arg Gly Pro Ala		415
	420	425
Leu Thr Pro Ile Arg Asp Glu Glu Trp Gly Gly His Ser Pro Arg Ser		430
	435	440
Pro Arg Gly Trp Asp Gln Glu Pro Ala Arg Glu Gln Ala Gly Gly Gly		445
	450	455
Trp Arg Ala Arg Arg Pro Arg Ala Arg Ser Val Asp Ala Leu Asp Asp		460
465	470	475
Leu Thr Pro Pro Ser Thr Ala Glu Ser Gly Ser Arg Ser Pro Thr Ser		480
	485	490
Asn Gly Gly Arg Ser Arg Ala Tyr Met Pro Pro Arg Ser Arg Ser Arg		495
	500	505
Asp Asp Leu Tyr Asp Gln Asp Asp Ser Arg Asp Phe Pro Arg Ser Arg		510
	515	520
Asp Pro His Tyr Asp Asp Phe Arg Ser Arg Glu Arg Pro Pro Ala Asp		525
	530	535
Pro Arg Ser His His His Arg Thr Arg Asp Pro Arg Asp Asn Gly Ser		540
545	550	555
Arg Ser Gly Asp Leu Pro Tyr Asp Gly Arg Leu Leu Glu Glu Ala Val		560
	565	570
Arg Lys Lys Gly Ser Glu Glu Arg Arg Arg Pro His Lys Glu Glu Glu		575
	580	585
Glu Glu Ala Tyr Tyr Pro Pro Ala Pro Pro Pro Tyr Ser Glu Thr Asp		590
	595	600
Ser Gln Ala Ser Arg Glu Arg Arg Leu Lys Lys Asn Leu Ala Leu Ser		605
	610	615
Arg Glu Ser Leu Val Val		620
625	630	

<210> 6

<211> 1954

<212> DNA

<213> Homo sapiens

<220>

<221> allele

<222> 595

<223> 9-3-324 : polymorphic base C or T


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<220>
<221> allele
<222> 987
<223> 9-7-325 : polymorphic base A or G

<220>
<221> allele
<222> 1158
<223> 9-9-246 : polymorphic base G or C

<220>
<221> allele
<222> 1454
<223> LSRX9f13-BM : polymorphic base deletion of AGG

<220>
<221> allele
<222> 1875
<223> LSRX9f14-BM : polymorphic base T or G

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atgcccttgg tccacgtcgt ttacgtcat taaaacttcc aga atg caa cag gac 115
                                         Met Gln Gln Asp
                                         1

gga ctt gga gta ggg aca agg aac gga agt ggg aag ggg agg agc gtg 163
Gly Leu Gly Val Gly Thr Arg Asn Gly Ser Gly Lys Gly Arg Ser Val
5          10          15          20
cac ccc tcc tgg cct tgg tgc gcg ccg cgc ccc cta agg tac ttt gga 211
His Pro Ser Trp Pro Trp Cys Ala Pro Arg Pro Leu Arg Tyr Phe Gly
          25          30          35
agg gac gcg cgg gcc aga cgc gcc cag acg gcc gcg atg gcg ctg ttg 259
Arg Asp Ala Arg Ala Arg Arg Ala Gln Thr Ala Ala Met Ala Leu Leu
          40          45          50
gcc ggc ggg ctc tcc aga ggg ctg ggc tcc cac ccg gcc gcc gca ggc 307
Ala Gly Gly Leu Ser Arg Gly Leu Gly Ser His Pro Ala Ala Ala Gly
          55          60          65
cgg gac gcg gtc gtc ttc gtg tgg ctt ctg ctt agc acc tgg tgc aca 355
Arg Asp Ala Val Val Phe Val Trp Leu Leu Leu Ser Thr Trp Cys Thr
          70          75          80
gct cct gcc agg gcc atc cag gtg acc gtg tcc aac ccc tac cac gtg 403
Ala Pro Ala Arg Ala Ile Gln Val Thr Val Ser Asn Pro Tyr His Val
          85          90          95          100
gtg atc ctc ttc cag cct gtg acc ctg ccc tgt acc tac cag atg acc 451
Val Ile Leu Phe Gln Pro Val Thr Leu Pro Cys Thr Tyr Gln Met Thr
          105          110          115
tcg acc ccc acg caa ccc atc gtc atc tgg aag tac aag tct ttc tgc 499
Ser Thr Pro Thr Gln Pro Ile Val Ile Trp Lys Tyr Lys Ser Phe Cys
          120          125          130
cgg gac cgc atc gcc gat gcc ttc tcc ccg gcc agc gtc gac aac cag 547
Arg Asp Arg Ile Ala Asp Ala Phe Ser Pro Ala Ser Val Asp Asn Gln
          135          140          145
ctc aat gcc cag ctg gca gcc ggg aac cca ggc tac aac ccc tac gty 595
Leu Asn Ala Gln Leu Ala Ala Gly Asn Pro Gly Tyr Asn Pro Tyr Val
          150          155          160
gag tgc cag gac agc gtg cgc acc gtc agg gtc gtg gcc acc aag cag 643
Glu Cys Gln Asp Ser Val Arg Thr Val Arg Val Val Ala Thr Lys Gln
          165          170          175          180
ggc aac gct gtg acc ctg gga gat tac tac cag ggc cgg agg att acc 691
Gly Asn Ala Val Thr Leu Gly Asp Tyr Tyr Gln Gly Arg Arg Ile Thr
          185          190          195
atc acc gga aat gct gac ctg acc ttt gac cag acg gcg tgg ggg gac 739

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Ile Thr Gly Asn Ala Asp Leu Thr Phe Asp Gln Thr Ala Trp Gly Asp	
200 205 210	
agt ggt gtg tat tac tgc tcc gtg gtc tca gcc cag gac ctc cag ggg	787
Ser Gly Val Tyr Tyr Cys Ser Val Val Ser Ala Gln Asp Leu Gln Gly	
215 220 225	
aac aat gag gcc tac gca gag ctc atc gtc ctt gtg tat gcc gcc ggc	835
Asn Asn Glu Ala Tyr Ala Glu Leu Ile Val Leu Val Tyr Ala Ala Gly	
230 235 240	
aaa gca gcc acc tca ggt gtt ccc agc att tat gcc ccc agc acc tat	883
Lys Ala Ala Thr Ser Gly Val Pro Ser Ile Tyr Ala Pro Ser Thr Tyr	
245 250 255 260	
gcc cac ctg tct ccc gcc aag acc cca ccc cca cca gct atg att ccc	931
Ala His Leu Ser Pro Ala Lys Thr Pro Pro Pro Pro Ala Met Ile Pro	
265 270 275	
atg ggc cct gcc tac aac ggg tac cct gga gga tac cct gga gac gtt	979
Met Gly Pro Ala Tyr Asn Gly Tyr Pro Gly Gly Tyr Pro Gly Asp Val	
280 285 290	
gac agg art agc tca gct ggt ggc caa ggc tcc tat gta ccc ctg ctt	1027
Asp Arg Xaa Ser Ser Ala Gly Gly Gln Gly Ser Tyr Val Pro Leu Leu	
295 300 305	
cgg gac acg gac agc agt gtg gcc tct gaa gtc cgc agt ggc tac agg	1075
Arg Asp Thr Asp Ser Ser Val Ala Ser Glu Val Arg Ser Gly Tyr Arg	
310 315 320	
att cag gcc agc cag cag gac gac tcc atg cgg gtc ctg tac tac atg	1123
Ile Gln Ala Ser Gln Asp Asp Ser Met Arg Val Leu Tyr Tyr Met	
325 330 335 340	
gag aag gag ctg gcc aac ttc gac cct tct cga cst ggc ccc ccc agt	1171
Glu Lys Glu Leu Ala Asn Phe Asp Pro Ser Arg Xaa Gly Pro Pro Ser	
345 350 355	
ggc cgt gtg gag cgg gcc atg agt gaa gtc acc tcc ctc cac gag gac	1219
Gly Arg Val Glu Arg Ala Met Ser Glu Val Thr Ser Leu His Glu Asp	
360 365 370	
gac tgg cga tct cgg cct tcc cgg ggc cct gcc ctc acc ccg atc cgg	1267
Asp Trp Arg Ser Arg Pro Ser Ser Gly Pro Ala Leu Thr Pro Ile Arg	
375 380 385	
gat gag gag tgg ggt ggc cac tcc ccc cgg agt ccc agg gga tgg gac	1315
Asp Glu Glu Trp Gly Gly His Ser Pro Arg Ser Pro Arg Gly Trp Asp	
390 395 400	
cag gag ccc gcc agg gag cag gca ggc ggg ggc tgg cgg gcc agg cgg	1363
Gln Glu Pro Ala Arg Glu Gln Ala Gly Gly Gly Trp Arg Ala Arg Arg	
405 410 415 420	
ccc cgg gcc cgc tcc gtg gac gcc ctg gac gac ctc acc ccg ccg agc	1411
Pro Arg Ala Arg Ser Val Asp Ala Leu Asp Asp Leu Thr Pro Pro Ser	
425 430 435	
acc gcc gag tca ggg agc agg tct ccc acg agt aat ggt ggg aga agc	1459
Thr Ala Glu Ser Gly Ser Arg Ser Pro Thr Ser Asn Gly Gly Arg Ser	
440 445 450	
cgg gcc tac atg ccc ccg cgg agc cgc agc cgg gac gac ctc tat gac	1507
Arg Ala Tyr Met Pro Pro Arg Ser Arg Ser Arg Asp Asp Leu Tyr Asp	
455 460 465	
caa gac gac tcg agg gac ttc cca cgc tcc cgg gac ccc cac tac gac	1555
Gln Asp Asp Ser Arg Asp Phe Pro Arg Ser Arg Asp Pro His Tyr Asp	
470 475 480	
gac ttc agg tct cgg gag cgc cct cct gcc gac ccc agg tcc cac cac	1603
Asp Phe Arg Ser Arg Glu Arg Pro Pro Ala Asp Pro Arg Ser His His	
485 490 495 500	
cac cgt acc cgg gac cct cgg gac aac ggc tcc agg tcc ggg gac ctc	1651
His Arg Thr Arg Asp Pro Arg Asp Asn Gly Ser Arg Ser Gly Asp Leu	
505 510 515	
ccc tat gat ggg cgg cta ctg gag gag gct gtg agg aag aag ggg tcg	1699
Pro Tyr Asp Gly Arg Leu Leu Glu Glu Ala Val Arg Lys Lys Gly Ser	
520 525 530	
gag gag agg agg aga ccc cac aag gag gag gag gaa gag gcc tac tac	1747

Glu	Glu	Arg	Arg	Arg	Pro	His	Lys	Glu	Glu	Glu	Glu	Glu	Ala	Tyr	Tyr		
		535					540					545					
ccg	ccc	gcg	ccg	ccc	ccg	tac	tcg	gag	acc	gac	tcg	cag	gcg	tcc	cga	1795	
Pro	Pro	Ala	Pro	Pro	Pro	Tyr	Ser	Glu	Thr	Asp	Ser	Gln	Ala	Ser	Arg		
	550					555					560						
gag	cgc	agg	ctc	aag	aag	aac	ttg	gcc	ctg	agt	cgg	gaa	agt	tta	gtc	1843	
Glu	Arg	Arg	Leu	Lys	Lys	Asn	Leu	Ala	Leu	Ser	Arg	Glu	Ser	Leu	Val		
	565				570					575				580			
gtc	tga	tctgacgttt	tctacgtacg	ttttgkattt	ttttttttaa	tttgaaggaa	1899										
Val	*																
cactgatgaa	gccctgccat	acccctccccg	agtctaataa	aacgtataat	cacaa	1954											

<210> 7
 <211> 581
 <212> PRT
 <213> Homo sapiens

<220>
 <221> VARIANT
 <222> 295
 <223> 9-7-325 : polymorphic amino acid Ser or Asn

<220>
 <221> VARIANT
 <222> 352
 <223> 9-9-246 : polymorphic amino acid Pro or Arg

<220>
 <221> VARIANT
 <222> 451
 <223> LSRX9f13-BM : polymorphic amino acid deletion of Arg

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 Gly Arg Ser Val His Pro Ser Trp Pro Trp Cys Ala Pro Arg Pro Leu
 20 25 30
 Arg Tyr Phe Gly Arg Asp Ala Arg Ala Arg Arg Ala Gln Thr Ala Ala
 35 40 45
 Met Ala Leu Leu Ala Gly Gly Leu Ser Arg Gly Leu Gly Ser His Pro
 50 55 60
 Ala Ala Ala Gly Arg Asp Ala Val Val Phe Val Trp Leu Leu Leu Ser
 65 70 75 80
 Thr Trp Cys Thr Ala Pro Ala Arg Ala Ile Gln Val Thr Val Ser Asn
 85 90 95
 Pro Tyr His Val Val Ile Leu Phe Gln Pro Val Thr Leu Pro Cys Thr
 100 105 110
 Tyr Gln Met Thr Ser Thr Pro Thr Gln Pro Ile Val Ile Trp Lys Tyr
 115 120 125
 Lys Ser Phe Cys Arg Asp Arg Ile Ala Asp Ala Phe Ser Pro Ala Ser
 130 135 140
 Val Asp Asn Gln Leu Asn Ala Gln Leu Ala Ala Gly Asn Pro Gly Tyr
 145 150 155 160
 Asn Pro Tyr Val Glu Cys Gln Asp Ser Val Arg Thr Val Arg Val Val
 165 170 175
 Ala Thr Lys Gln Gly Asn Ala Val Thr Leu Gly Asp Tyr Tyr Gln Gly
 180 185 190
 Arg Arg Ile Thr Ile Thr Gly Asn Ala Asp Leu Thr Phe Asp Gln Thr
 195 200 205
 Ala Trp Gly Asp Ser Gly Val Tyr Tyr Cys Ser Val Val Ser Ala Gln
 210 215 220
 Asp Leu Gln Gly Asn Asn Glu Ala Tyr Ala Glu Leu Ile Val Leu Val
 225 230 235 240

Tyr Ala Ala Gly Lys Ala Ala Thr Ser Gly Val Pro Ser Ile Tyr Ala
 245 250 255
 Pro Ser Thr Tyr Ala His Leu Ser Pro Ala Lys Thr Pro Pro Pro Pro
 260 265 270
 Ala Met Ile Pro Met Gly Pro Ala Tyr Asn Gly Tyr Pro Gly Gly Tyr
 275 280 285
 Pro Gly Asp Val Asp Arg Ser Ser Ser Ala Gly Gly Gln Gly Ser Tyr
 290 295 300
 Val Pro Leu Leu Arg Asp Thr Asp Ser Ser Val Ala Ser Glu Val Arg
 305 310 315 320
 Ser Gly Tyr Arg Ile Gln Ala Ser Gln Gln Asp Asp Ser Met Arg Val
 325 330 335
 Leu Tyr Tyr Met Glu Lys Glu Leu Ala Asn Phe Asp Pro Ser Arg Pro
 340 345 350
 Gly Pro Pro Ser Gly Arg Val Glu Arg Ala Met Ser Glu Val Thr Ser
 355 360 365
 Leu His Glu Asp Asp Trp Arg Ser Arg Pro Ser Arg Gly Pro Ala Leu
 370 375 380
 Thr Pro Ile Arg Asp Glu Glu Trp Gly Gly His Ser Pro Arg Ser Pro
 385 390 395 400
 Arg Gly Trp Asp Gln Glu Pro Ala Arg Glu Gln Ala Gly Gly Gly Trp
 405 410 415
 Arg Ala Arg Arg Pro Arg Ala Arg Ser Val Asp Ala Leu Asp Asp Leu
 420 425 430
 Thr Pro Pro Ser Thr Ala Glu Ser Gly Ser Arg Ser Pro Thr Ser Asn
 435 440 445
 Gly Gly Arg Ser Arg Ala Tyr Met Pro Pro Arg Ser Arg Ser Arg Asp
 450 455 460
 Asp Leu Tyr Asp Gln Asp Asp Ser Arg Asp Phe Pro Arg Ser Arg Asp
 465 470 475 480
 Pro His Tyr Asp Asp Phe Arg Ser Arg Glu Arg Pro Pro Ala Asp Pro
 485 490 495
 Arg Ser His His His Arg Thr Arg Asp Pro Arg Asp Asn Gly Ser Arg
 500 505 510
 Ser Gly Asp Leu Pro Tyr Asp Gly Arg Leu Leu Glu Glu Ala Val Arg
 515 520 525
 Lys Lys Gly Ser Glu Glu Arg Arg Arg Pro His Lys Glu Glu Glu Glu
 530 535 540
 Glu Ala Tyr Tyr Pro Pro Ala Pro Pro Pro Tyr Ser Glu Thr Asp Ser
 545 550 555 560
 Gln Ala Ser Arg Glu Arg Arg Leu Lys Lys Asn Leu Ala Leu Ser Arg
 565 570 575
 Glu Ser Leu Val Val
 580

<210> 8

<211> 2097

<212> DNA

<213> Rattus norvegicus

<400> 8

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tttatgggtt	agaactcctc	cagagcgggg	gaaaaaggac	ttggaatagg	ggcgggacgg	120
agcacgcacc	cttctccgcc	ttggttctcg	ccgcgcccc	tactctcggg	atacttgga	180
ggggacgcgc	gggcaccgtc	gctgctagac	ggccgcg	atg gcg ccg gcg gcc ggc		235
			Met Ala Pro Ala Ala Gly			
			1	5		
gcg tgt gct	ggg gcg cct	gac tcc	cac cca gct	acc gtg gtc	ttc gtg	283
Ala Cys Ala	Gly Ala Pro	Asp Ser	His Pro Ala	Thr Val Val	Phe Val	
	10		15	20		
tgt ctc ttt	ctc atc att	ttc tgc	cca gac cct	gcc agt gcc	atc cag	331
Cys Leu Phe	Leu Ile Ile	Phe Cys	Pro Asp Pro	Ala Ser Ala	Ile Gln	
	25	30		35		

gtg act gtg tct gac ccc tac cac gta gtg atc ctg ttc cag cca gtg	379
Val Thr Val Ser Asp Pro Tyr His Val Val Ile Leu Phe Gln Pro Val	
40 45 50	
acc ctg ccc tgc acc tat cag atg agc aac act ctc aca gtc ccc atc	427
Thr Leu Pro Cys Thr Tyr Gln Met Ser Asn Thr Leu Thr Val Pro Ile	
55 60 65 70	
gtg atc tgg aag tac aag tca ttc tgc cgg gac cgt att gcc gat gcc	475
Val Ile Trp Lys Tyr Lys Ser Phe Cys Arg Asp Arg Ile Ala Asp Ala	
75 80 85	
ttc tct cct gcc agt gtg gac aac cag cta aat gcc cag ttg gca gct	523
Phe Ser Pro Ala Ser Val Asp Asn Gln Leu Asn Ala Gln Leu Ala Ala	
90 95 100	
ggc aac ccc ggc tac aac ccc tat gtg gag tgc cag gac agt gta cgc	571
Gly Asn Pro Gly Tyr Asn Pro Tyr Val Glu Cys Gln Asp Ser Val Arg	
105 110 115	
act gtc agg gtg gtg gcc acc aaa cag ggc aat gcg gtg acc ctg gga	619
Thr Val Arg Val Val Ala Thr Lys Gln Gly Asn Ala Val Thr Leu Gly	
120 125 130	
gac tac tac caa ggc agg agg atc acc ata aca gga aat gct gac ctg	667
Asp Tyr Tyr Gln Gly Arg Arg Ile Thr Ile Thr Gly Asn Ala Asp Leu	
135 140 145 150	
acc ttc gag cag aca gcc tgg gga gac agt gga gtg tat tac tgc tct	715
Thr Phe Glu Gln Thr Ala Trp Gly Asp Ser Gly Val Tyr Tyr Cys Ser	
155 160 165	
gtg gtc tcg gcc caa gat ctg gat gga aac aac gag gcg tac gca gag	763
Val Val Ser Ala Gln Asp Leu Asp Gly Asn Asn Glu Ala Tyr Ala Glu	
170 175 180	
ctc atc gtc ctt ggc agg acc tca gag gcc cct gag ctc cta cct ggt	811
Leu Ile Val Leu Gly Arg Thr Ser Glu Ala Pro Glu Leu Leu Pro Gly	
185 190 195	
ttt cgg gcg ggg ccc ttg gaa gat tgg ctc ttt gtg gtc gtg gtc tgc	859
Phe Arg Ala Gly Pro Leu Glu Asp Trp Leu Phe Val Val Val Cys	
200 205 210	
ctg gcg agc ctc ctc ctc ttc ctc ctc ctg ggc atc tgc tgg tgc cag	907
Leu Ala Ser Leu Leu Leu Phe Leu Leu Leu Gly Ile Cys Trp Cys Gln	
215 220 225 230	
tgc tgt cct cac acc tgc tgc tgc tat gtc cga tgt ccc tgc tgc cca	955
Cys Cys Pro His Thr Cys Cys Cys Tyr Val Arg Cys Pro Cys Cys Pro	
235 240 245	
gac aag tgc tgt tgc cct gag gct ctt tat gct gct ggc aaa gca gcc	1003
Asp Lys Cys Cys Cys Pro Glu Ala Leu Tyr Ala Ala Gly Lys Ala Ala	
250 255 260	
acc tca ggt gtc ccg agc atc tat gcc ccc agc atc tat acc cac ctc	1051
Thr Ser Gly Val Pro Ser Ile Tyr Ala Pro Ser Ile Tyr Thr His Leu	
265 270 275	
tca cct gcc aag acc cca cca cct ccg cct gcc atg att ccc atg ggc	1099
Ser Pro Ala Lys Thr Pro Pro Pro Pro Pro Ala Met Ile Pro Met Gly	
280 285 290	
cct ccc tat ggg tac cct gga gac ttt gac aga cat agc tca gtt ggt	1147
Pro Pro Tyr Gly Tyr Pro Gly Asp Phe Asp Arg His Ser Ser Val Gly	
295 300 305 310	
ggc cac agc tcc caa gta ccc ctg ctg cgt gac gtg gat ggc agt gta	1195
Gly His Ser Ser Gln Val Pro Leu Leu Arg Asp Val Asp Gly Ser Val	
315 320 325	
tct tca gaa gta cga agt ggc tac agg atc cag gct aac cag caa gat	1243
Ser Ser Glu Val Arg Ser Gly Tyr Arg Ile Gln Ala Asn Gln Gln Asp	
330 335 340	
gac tcc atg agg gtc cta tac tat atg gag aaa gag cta gcc aac ttt	1291
Asp Ser Met Arg Val Leu Tyr Tyr Met Glu Lys Glu Leu Ala Asn Phe	
345 350 355	
gac cct tcc cga cct ggc cct ccc aat ggc aga gtg gaa cgg gcc atg	1339
Asp Pro Ser Arg Pro Gly Pro Pro Asn Gly Arg Val Glu Arg Ala Met	
360 365 370	

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agt gaa gta acc tcc ctc cat gaa gat gac tgg cga tcg agg cct tcc      1387
Ser Glu Val Thr Ser Leu His Glu Asp Asp Trp Arg Ser Arg Pro Ser
375                      380                      385                      390
agg gct cct gcc ctc acc ccc atc agg gat gag gag tgg aat cgc cac      1435
Arg Ala Pro Ala Leu Thr Pro Ile Arg Asp Glu Glu Trp Asn Arg His
                      395                      400                      405

tcc cca cag agt ccc aga aca tgg gag cag gaa ccc ctt caa gaa caa      1483
Ser Pro Gln Ser Pro Arg Thr Trp Glu Gln Glu Pro Leu Gln Glu Gln
                      410                      415                      420

cca agg ggt ggt tgg ggg tct gga cgc cct cgg gcc cgc tct gtg gat      1531
Pro Arg Gly Gly Trp Gly Ser Gly Arg Pro Arg Ala Arg Ser Val Asp
                      425                      430                      435

gct cta gat gat atc aac cgg cct ggc tcc act gaa tca gga cgg tct      1579
Ala Leu Asp Asp Ile Asn Arg Pro Gly Ser Thr Glu Ser Gly Arg Ser
440                      445                      450

tct ccc cca agt agt gga cgg aga gga cgg gcc tat gca cct cca aga      1627
Ser Pro Pro Ser Ser Gly Arg Arg Gly Arg Ala Tyr Ala Pro Pro Arg
455                      460                      465                      470

agt cgc agc cgg gat gac ctc tat gac ccg gac gat cct agg gac ttg      1675
Ser Arg Ser Arg Asp Asp Leu Tyr Asp Pro Asp Asp Pro Arg Asp Leu
                      475                      480                      485

cca cat tcc cga gat ccc cac tat tat gac gac atc agg tct aga gat      1723
Pro His Ser Arg Asp Pro His Tyr Tyr Asp Asp Ile Arg Ser Arg Asp
490                      495                      500

cca cgt gct gac ccc aga tcc cgt cag cga tcc cga gat cct cgg gat      1771
Pro Arg Ala Asp Pro Arg Ser Arg Gln Arg Ser Arg Asp Pro Arg Asp
505                      510                      515

gct ggc ttc agg tca agg gac cct cag tat gat ggg cga cta tta gaa      1819
Ala Gly Phe Arg Ser Arg Asp Pro Gln Tyr Asp Gly Arg Leu Leu Glu
520                      525                      530

gag gct tta aag aaa aag ggg tcg ggc gag aga agg agg gtt tac agg      1867
Glu Ala Leu Lys Lys Lys Gly Ser Gly Glu Arg Arg Arg Val Tyr Arg
535                      540                      545                      550

gag gaa gaa gag gaa gag gag ggc caa tac ccc cca gca cct cca cct      1915
Glu Glu Glu Glu Glu Glu Glu Gly Gln Tyr Pro Pro Ala Pro Pro Pro
555                      560                      565

tac tca gag act gac tcg cag gcc tca cgg gag agg agg ctg aaa aag      1963
Tyr Ser Glu Thr Asp Ser Gln Ala Ser Arg Glu Arg Arg Leu Lys Lys
570                      575                      580

aat ttg gcc ctg agt cgg gaa agt tta gtc gtc tga tccacgtttt      2009
Asn Leu Ala Leu Ser Arg Glu Ser Leu Val Val *
585                      590

gtatgtagct tttgtacttt ttttttaatt ggaatcaata ttgatgaaac ttcaagccta      2069
ataaaatgtc taatcacaaa aaaaaaaaaa
2097

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<210> 9
<211> 593
<212> PRT
<213> Rattus norvegicus

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Ala Thr Val Val Phe Val Cys Leu Phe Leu Ile Ile Phe Cys Pro Asp
20                      25                      30
Pro Ala Ser Ala Ile Gln Val Thr Val Ser Asp Pro Tyr His Val Val
35                      40                      45
Ile Leu Phe Gln Pro Val Thr Leu Pro Cys Thr Tyr Gln Met Ser Asn
50                      55                      60
Thr Leu Thr Val Pro Ile Val Ile Trp Lys Tyr Lys Ser Phe Cys Arg
65                      70                      75                      80
Asp Arg Ile Ala Asp Ala Phe Ser Pro Ala Ser Val Asp Asn Gln Leu
85                      90                      95

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<210> 10
 <211> 2040
 <212> DNA
 <213> Rattus norvegicus

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 agcacgcacc cttctccgcc ttggttctcg ccgcgcccc tactctcggg atacttggga 180
 ggggacgcgc gggcaccgtc gctgctagac ggccgcg atg gcg ccg gcg gcc ggc 235
 Met Ala Pro Ala Ala Gly
 1 5
 gcg tgt gct ggg gcg cct gac tcc cac cca gct acc gtg gtc ttc gtg 283
 Ala Cys Ala Gly Ala Pro Asp Ser His Pro Ala Thr Val Val Phe Val
 10 15 20
 tgt ctc ttt ctc atc att ttc tgc cca gac cct gcc agt gcc atc cag 331
 Cys Leu Phe Leu Ile Ile Phe Cys Pro Asp Pro Ala Ser Ala Ile Gln
 25 30 35
 gtg act gtg tct gac ccc tac cac gta gtg atc ctg ttc cag cca gtg 379
 Val Thr Val Ser Asp Pro Tyr His Val Val Ile Leu Phe Gln Pro Val
 40 45 50
 acc ctg ccc tgc acc tat cag atg agc aac act ctc aca gtc ccc atc 427
 Thr Leu Pro Cys Thr Tyr Gln Met Ser Asn Thr Leu Thr Val Pro Ile
 55 60 65 70
 gtg atc tgg aag tac aag tca ttc tgc cgg gac cgt att gcc gat gcc 475
 Val Ile Trp Lys Tyr Lys Ser Phe Cys Arg Asp Arg Ile Ala Asp Ala
 75 80 85
 ttc tct cct gcc agt gtg gac aac cag cta aat gcc cag ttg gca gct 523
 Phe Ser Pro Ala Ser Val Asp Asn Gln Leu Asn Ala Gln Leu Ala Ala
 90 95 100
 ggc aac ccc ggc tac aac ccc tat gtg gag tgc cag gac agt gta cgc 571
 Gly Asn Pro Gly Tyr Asn Pro Tyr Val Glu Cys Gln Asp Ser Val Arg
 105 110 115
 act gtc agg gtg gtg gcc acc aaa cag ggc aat gcg gtg acc ctg gga 619
 Thr Val Arg Val Val Ala Thr Lys Gln Gly Asn Ala Val Thr Leu Gly
 120 125 130
 gac tac tac caa ggc agg agg atc acc ata aca gga aat gct gac ctg 667
 Asp Tyr Tyr Gln Gly Arg Arg Ile Thr Ile Thr Gly Asn Ala Asp Leu
 135 140 145 150
 acc ttc gag cag aca gcc tgg gga gac agt gga gtg tat tac tgc tct 715
 Thr Phe Glu Gln Thr Ala Trp Gly Asp Ser Gly Val Tyr Tyr Cys Ser
 155 160 165
 gtg gtc tcg gcc caa gat ctg gat gga aac aac gag gcg tac gca gag 763
 Val Val Ser Ala Gln Asp Leu Asp Gly Asn Asn Glu Ala Tyr Ala Glu
 170 175 180
 ctc atc gtc ctt gat tgg ctc ttt gtg gtc gtg gtc tgc ctg gcg agc 811
 Leu Ile Val Leu Asp Trp Leu Phe Val Val Val Val Cys Leu Ala Ser
 185 190 195
 ctc ctc ctc ttc ctc ctc ctg ggc atc tgc tgg tgc cag tgc tgt cct 859
 Leu Leu Leu Phe Leu Leu Leu Gly Ile Cys Trp Cys Gln Cys Cys Pro
 200 205 210
 cac acc tgc tgc tgc tat gtc cga tgt ccc tgc tgc cca gac aag tgc 907
 His Thr Cys Cys Cys Tyr Val Arg Cys Pro Cys Cys Pro Asp Lys Cys
 215 220 225 230
 tgt tgc cct gag gct ctt tat gct gct ggc aaa gca gcc acc tca ggt 955
 Cys Cys Pro Glu Ala Leu Tyr Ala Ala Gly Lys Ala Ala Thr Ser Gly
 235 240 245
 gtc ccg agc atc tat gcc ccc agc atc tat acc cac ctc tca cct gcc 1003
 Val Pro Ser Ile Tyr Ala Pro Ser Ile Tyr Thr His Leu Ser Pro Ala
 250 255 260
 aag acc cca cca cct ccg cct gcc atg att ccc atg ggc cct ccc tat 1051
 Lys Thr Pro Pro Pro Pro Pro Ala Met Ile Pro Met Gly Pro Pro Tyr

265	270	275	
ggg tac cct gga gac ttt	gac aga cat agc tca gtt ggt ggc cac agc		1099
Gly Tyr Pro Gly Asp Phe	Asp Arg His Ser Ser Val Gly Gly His Ser		
280	285	290	
tcc caa gta ccc ctg ctg	cgt gac gtg gat ggc agt gta tct tca gaa		1147
Ser Gln Val Pro Leu Arg	Asp Val Asp Gly Ser Val Ser Ser Glu		
295	300	305	310
gta cga agt ggc tac agg	atc cag gct aac cag caa gat gac tcc atg		1195
Val Arg Ser Gly Tyr Arg	Ile Gln Ala Asn Gln Gln Asp Asp Ser Met		
315	320	325	
agg gtc cta tac tat atg	gag aaa gag cta gcc aac ttt gac cct tcc		1243
Arg Val Leu Tyr Tyr Met	Glu Lys Glu Leu Ala Asn Phe Asp Pro Ser		
330	335	340	
cga cct ggc cct ccc aat	ggc aga gtg gaa cgg gcc atg agt gaa gta		1291
Arg Pro Gly Pro Pro Asn	Gly Arg Val Glu Arg Ala Met Ser Glu Val		
345	350	355	
acc tcc ctc cat gaa gat	gac tgg cga tcg agg cct tcc agg gct cct		1339
Thr Ser Leu His Glu Asp	Asp Trp Arg Ser Arg Pro Ser Arg Ala Pro		
360	365	370	
gcc ctc acc ccc atc agg	gat gag gag tgg aat cgc cac tcc cca cag		1387
Ala Leu Thr Pro Ile Arg	Asp Glu Glu Trp Asn Arg His Ser Pro Gln		
375	380	385	390
agt ccc aga aca tgg gag	cag gaa ccc ctt caa gaa caa cca agg ggt		1435
Ser Pro Arg Thr Trp Glu	Gln Glu Pro Leu Gln Glu Gln Pro Arg Gly		
395	400	405	
ggg tgg ggg tct gga cgc	cct cgg gcc cgc tct gtg gat gct cta gat		1483
Gly Trp Gly Ser Gly Arg	Pro Arg Ala Arg Ser Val Asp Ala Leu Asp		
410	415	420	
gat atc aac cgg cct ggc	tcc act gaa tca gga cgg tct tct ccc cca		1531
Asp Ile Asn Arg Pro Gly	Ser Thr Glu Ser Gly Arg Ser Ser Pro Pro		
425	430	435	
agt agt gga cgg aga gga	cgg gcc tat gca cct cca aga agt cgc agc		1579
Ser Ser Gly Arg Arg Gly	Arg Ala Tyr Ala Pro Pro Arg Ser Arg Ser		
440	445	450	
cgg gat gac ctc tat gac	ccg gac gat cct agg gac ttg cca cat tcc		1627
Arg Asp Asp Leu Tyr Asp	Pro Asp Asp Pro Arg Asp Leu Pro His Ser		
455	460	465	470
cga gat ccc cac tat tat	gac gac atc agg tct aga gat cca cgt gct		1675
Arg Asp Pro His Tyr Tyr	Asp Asp Ile Arg Ser Arg Asp Pro Arg Ala		
475	480	485	
gac ccc aga tcc cgt cag	cga tcc cga gat cct cgg gat gct ggc ttc		1723
Asp Pro Arg Ser Arg Gln	Arg Ser Arg Asp Pro Arg Asp Ala Gly Phe		
490	495	500	
agg tca agg gac cct cag	tat gat ggg cga cta tta gaa gag gct tta		1771
Arg Ser Arg Asp Pro Gln	Tyr Asp Gly Arg Leu Leu Glu Glu Ala Leu		
505	510	515	
aag aaa aag ggg tcg ggc	gag aga agg agg gtt tac agg gag gaa gaa		1819
Lys Lys Lys Gly Ser Gly	Glu Arg Arg Arg Val Tyr Arg Glu Glu Glu		
520	525	530	
gag gaa gag gag ggc caa	tac ccc cca gca cct cca cct tac tca gag		1867
Glu Glu Glu Glu Gly Gln	Tyr Pro Pro Ala Pro Pro Tyr Ser Glu		
535	540	545	550
act gac tcg cag gcc tca	cgg gag agg agg ctg aaa aag aat ttg gcc		1915
Thr Asp Ser Gln Ala Ser	Arg Glu Arg Arg Leu Lys Lys Asn Leu Ala		
555	560	565	
ctg agt cgg gaa agt tta	gtc gtc tga tccacgtttt gtatgtagct		1962
Leu Ser Arg Glu Ser Leu	Val Val *		
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taatcacaaaa aaaaaaaa			2040

<210> 11
<211> 574

<212> PRT

<213> Rattus norvegicus

<400> 11

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Ala	Thr	Val	Val	Phe	Val	Cys	Leu	Phe	Leu	Ile	Ile	Phe	Cys	Pro	Asp
		20					25					30			
Pro	Ala	Ser	Ala	Ile	Gln	Val	Thr	Val	Ser	Asp	Pro	Tyr	His	Val	Val
		35				40					45				
Ile	Leu	Phe	Gln	Pro	Val	Thr	Leu	Pro	Cys	Thr	Tyr	Gln	Met	Ser	Asn
	50					55					60				
Thr	Leu	Thr	Val	Pro	Ile	Val	Ile	Trp	Lys	Tyr	Lys	Ser	Phe	Cys	Arg
65				70						75					80
Asp	Arg	Ile	Ala	Asp	Ala	Phe	Ser	Pro	Ala	Ser	Val	Asp	Asn	Gln	Leu
			85					90					95		
Asn	Ala	Gln	Leu	Ala	Ala	Gly	Asn	Pro	Gly	Tyr	Asn	Pro	Tyr	Val	Glu
		100					105					110			
Cys	Gln	Asp	Ser	Val	Arg	Thr	Val	Arg	Val	Val	Ala	Thr	Lys	Gln	Gly
		115				120						125			
Asn	Ala	Val	Thr	Leu	Gly	Asp	Tyr	Tyr	Gln	Gly	Arg	Arg	Ile	Thr	Ile
	130					135					140				
Thr	Gly	Asn	Ala	Asp	Leu	Thr	Phe	Glu	Gln	Thr	Ala	Trp	Gly	Asp	Ser
145				150						155					160
Gly	Val	Tyr	Tyr	Cys	Ser	Val	Val	Ser	Ala	Gln	Asp	Leu	Asp	Gly	Asn
			165					170					175		
Asn	Glu	Ala	Tyr	Ala	Glu	Leu	Ile	Val	Leu	Asp	Trp	Leu	Phe	Val	Val
		180					185						190		
Val	Val	Cys	Leu	Ala	Ser	Leu	Leu	Leu	Phe	Leu	Leu	Leu	Gly	Ile	Cys
		195				200						205			
Trp	Cys	Gln	Cys	Cys	Pro	His	Thr	Cys	Cys	Cys	Tyr	Val	Arg	Cys	Pro
	210					215					220				
Cys	Cys	Pro	Asp	Lys	Cys	Cys	Cys	Pro	Glu	Ala	Leu	Tyr	Ala	Ala	Gly
225				230						235					240
Lys	Ala	Ala	Thr	Ser	Gly	Val	Pro	Ser	Ile	Tyr	Ala	Pro	Ser	Ile	Tyr
			245					250					255		
Thr	His	Leu	Ser	Pro	Ala	Lys	Thr	Pro	Pro	Pro	Pro	Pro	Ala	Met	Ile
		260						265					270		
Pro	Met	Gly	Pro	Pro	Tyr	Gly	Tyr	Pro	Gly	Asp	Phe	Asp	Arg	His	Ser
	275						280					285			
Ser	Val	Gly	Gly	His	Ser	Ser	Gln	Val	Pro	Leu	Leu	Arg	Asp	Val	Asp
	290					295					300				
Gly	Ser	Val	Ser	Ser	Glu	Val	Arg	Ser	Gly	Tyr	Arg	Ile	Gln	Ala	Asn
305					310					315					320
Gln	Gln	Asp	Asp	Ser	Met	Arg	Val	Leu	Tyr	Tyr	Met	Glu	Lys	Glu	Leu
				325					330					335	
Ala	Asn	Phe	Asp	Pro	Ser	Arg	Pro	Gly	Pro	Pro	Asn	Gly	Arg	Val	Glu
		340						345					350		
Arg	Ala	Met	Ser	Glu	Val	Thr	Ser	Leu	His	Glu	Asp	Asp	Trp	Arg	Ser
	355						360					365			
Arg	Pro	Ser	Arg	Ala	Pro	Ala	Leu	Thr	Pro	Ile	Arg	Asp	Glu	Glu	Trp
	370					375						380			
Asn	Arg	His	Ser	Pro	Gln	Ser	Pro	Arg	Thr	Trp	Glu	Gln	Glu	Pro	Leu
385					390					395					400
Gln	Glu	Gln	Pro	Arg	Gly	Gly	Trp	Gly	Ser	Gly	Arg	Pro	Arg	Ala	Arg
			405						410					415	
Ser	Val	Asp	Ala	Leu	Asp	Asp	Ile	Asn	Arg	Pro	Gly	Ser	Thr	Glu	Ser
		420						425					430		
Gly	Arg	Ser	Ser	Pro	Pro	Ser	Ser	Gly	Arg	Arg	Gly	Arg	Ala	Tyr	Ala
	435						440					445			
Pro	Pro	Arg	Ser	Arg	Ser	Arg	Asp	Asp	Leu	Tyr	Asp	Pro	Asp	Asp	Pro
	450					455					460				
Arg	Asp	Leu	Pro	His	Ser	Arg	Asp	Pro	His	Tyr	Tyr	Asp	Asp	Ile	Arg

465		470		475		480
Ser Arg Asp Pro Arg	Ala Asp Pro Arg	Ser Arg Gln Arg	Ser Arg Asp			
	485	490	495			
Pro Arg Asp Ala Gly	Phe Arg Ser Arg	Pro Gln Tyr Asp	Gly Arg			
	500	505	510			
Leu Leu Glu Glu Ala	Leu Lys Lys Lys Gly	Ser Gly Glu Arg	Arg Arg			
	515	520	525			
Val Tyr Arg Glu Glu	Glu Glu Glu Glu Gly	Gln Tyr Pro Pro	Ala			
	530	535	540			
Pro Pro Pro Tyr Ser	Glu Thr Asp Ser Gln	Ala Ser Arg Glu	Arg Arg			
	545	550	555			560
Leu Lys Lys Asn Leu	Ala Leu Ser Arg	Glu Ser Leu Val	Val			
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<210> 12
 <211> 1893
 <212> DNA
 <213> Rattus norvegicus

<400> 12

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agcacgcacc cttctccgcc ttggttctcg ccgcgcccc tactctcggg atacttgga	180
ggggacgcgc gggcaccgtc gctgctagac ggccgcg atg gcg ccg gcg gcc ggc	235
Met Ala Pro Ala Ala Gly	
1 5	
gcg tgt gct ggg gcg cct gac tcc cac cca gct acc gtg gtc ttc gtg	283
Ala Cys Ala Gly Ala Pro Asp Ser His Pro Ala Thr Val Val Phe Val	
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tgt ctc ttt ctc atc att ttc tgc cca gac cct gcc agt gcc atc cag	331
Cys Leu Phe Leu Ile Ile Phe Cys Pro Asp Pro Ala Ser Ala Ile Gln	
25 30 35	
gtg act gtg tct gac ccc tac cac gta gtg atc ctg ttc cag cca gtg	379
Val Thr Val Ser Asp Pro Tyr His Val Val Ile Leu Phe Gln Pro Val	
40 45 50	
acc ctg ccc tgc acc tat cag atg agc aac act ctc aca gtc ccc atc	427
Thr Leu Pro Cys Thr Tyr Gln Met Ser Asn Thr Leu Thr Val Pro Ile	
55 60 65 70	
gtg atc tgg aag tac aag tca ttc tgc cgg gac cgt att gcc gat gcc	475
Val Ile Trp Lys Tyr Lys Ser Phe Cys Arg Asp Arg Ile Ala Asp Ala	
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ttc tct cct gcc agt gtg gac aac cag cta aat gcc cag ttg gca gct	523
Phe Ser Pro Ala Ser Val Asp Asn Gln Leu Asn Ala Gln Leu Ala Ala	
90 95 100	
ggc aac ccc ggc tac aac ccc tat gtg gag tgc cag gac agt gta cgc	571
Gly Asn Pro Gly Tyr Asn Pro Tyr Val Glu Cys Gln Asp Ser Val Arg	
105 110 115	
act gtc agg gtg gtg gcc acc aaa cag ggc aat gcg gtg acc ctg gga	619
Thr Val Arg Val Val Ala Thr Lys Gln Gly Asn Ala Val Thr Leu Gly	
120 125 130	
gac tac tac caa ggc agg agg atc acc ata aca gga aat gct gac ctg	667
Asp Tyr Tyr Gln Gly Arg Arg Ile Thr Ile Thr Gly Asn Ala Asp Leu	
135 140 145 150	
acc ttc gag cag aca gcc tgg gga gac agt gga gtg tat tac tgc tct	715
Thr Phe Glu Gln Thr Ala Trp Gly Asp Ser Gly Val Tyr Tyr Cys Ser	
155 160 165	
gtg gtc tcg gcc caa gat ctg gat gga aac aac gag gcg tac gca gag	763
Val Val Ser Ala Gln Asp Leu Asp Gly Asn Asn Glu Ala Tyr Ala Glu	
170 175 180	
ctc atc gtc ctt gtt tat gct gct ggc aaa gca gcc acc tca ggt gtc	811
Leu Ile Val Leu Val Tyr Ala Ala Gly Lys Ala Ala Thr Ser Gly Val	
185 190 195	
ccg agc atc tat gcc ccc agc atc tat acc cac ctc tca cct gcc aag	859

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Thr	Pro	Pro	Pro	Pro	Pro	Ala	Met	Ile	Pro	Met	Gly	Pro	Pro	Tyr	Gly	
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tac	cct	gga	gac	ttt	gac	aga	cat	agc	tca	gtt	ggg	ggc	cac	agc	tcc	955
Tyr	Pro	Gly	Asp	Phe	Asp	Arg	His	Ser	Ser	Val	Gly	Gly	His	Ser	Ser	
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caa	gta	ccc	ctg	ctg	cgt	gac	gtg	gat	ggc	agt	gta	tct	tca	gaa	gta	1003
Gln	Val	Pro	Leu	Leu	Arg	Asp	Val	Asp	Gly	Ser	Val	Ser	Ser	Glu	Val	
				250					255				260			
cga	agt	ggc	tac	agg	atc	cag	gct	aac	cag	caa	gat	gac	tcc	atg	agg	1051
Arg	Ser	Gly	Tyr	Arg	Ile	Gln	Ala	Asn	Gln	Gln	Asp	Asp	Ser	Met	Arg	
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gtc	cta	tac	tat	atg	gag	aaa	gag	cta	gcc	aac	ttt	gac	cct	tcc	cga	1099
Val	Leu	Tyr	Tyr	Met	Glu	Lys	Glu	Leu	Ala	Asn	Phe	Asp	Pro	Ser	Arg	
				280		285					290					
cct	ggc	cct	ccc	aat	ggc	aga	gtg	gaa	cgg	gcc	atg	agt	gaa	gta	acc	1147
Pro	Gly	Pro	Pro	Asn	Gly	Arg	Val	Glu	Arg	Ala	Met	Ser	Glu	Val	Thr	
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tcc	ctc	cat	gaa	gat	gac	tgg	cga	tcg	agg	cct	tcc	agg	gct	cct	gcc	1195
Ser	Leu	His	Glu	Asp	Asp	Trp	Arg	Ser	Arg	Pro	Ser	Arg	Ala	Pro	Ala	
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ctc	acc	ccc	atc	agg	gat	gag	gag	tgg	aat	cgc	cac	tcc	cca	cag	agt	1243
Leu	Thr	Pro	Ile	Arg	Asp	Glu	Glu	Trp	Asn	Arg	His	Ser	Pro	Gln	Ser	
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ccc	aga	aca	tgg	gag	cag	gaa	ccc	ctt	caa	gaa	caa	cca	agg	ggg	ggg	1291
Pro	Arg	Thr	Trp	Glu	Gln	Glu	Pro	Leu	Gln	Glu	Gln	Pro	Arg	Gly	Gly	
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tgg	ggg	tct	gga	cgc	cct	cgg	gcc	cgc	tct	gtg	gat	gct	cta	gat	gat	1339
Trp	Gly	Ser	Gly	Arg	Pro	Arg	Ala	Arg	Ser	Val	Asp	Ala	Leu	Asp	Asp	
	360				365					370						
atc	aac	cgg	cct	ggc	tcc	act	gaa	tca	gga	cgg	tct	tct	ccc	cca	agt	1387
Ile	Asn	Arg	Pro	Gly	Ser	Thr	Glu	Ser	Gly	Arg	Ser	Ser	Pro	Pro	Ser	
				380					385						390	
agt	gga	cgg	aga	gga	cgg	gcc	tat	gca	cct	cca	aga	agt	cgc	agc	cgg	1435
Ser	Gly	Arg	Arg	Gly	Arg	Ala	Tyr	Ala	Pro	Pro	Arg	Ser	Arg	Ser	Arg	
				395					400					405		
gat	gac	ctc	tat	gac	ccg	gac	gat	cct	agg	gac	ttg	cca	cat	tcc	cga	1483
Asp	Asp	Leu	Tyr	Asp	Pro	Asp	Asp	Pro	Arg	Asp	Leu	Pro	His	Ser	Arg	
			410					415					420			
gat	ccc	cac	tat	tat	gac	gac	atc	agg	tct	aga	gat	cca	cgt	gct	gac	1531
Asp	Pro	His	Tyr	Tyr	Asp	Asp	Ile	Arg	Ser	Arg	Asp	Pro	Arg	Ala	Asp	
		425				430						435				
ccc	aga	tcc	cgt	cag	cga	tcc	cga	gat	cct	cgg	gat	gct	ggc	ttc	agg	1579
Pro	Arg	Ser	Arg	Gln	Arg	Ser	Arg	Asp	Pro	Arg	Asp	Ala	Gly	Phe	Arg	
		440				445					450					
tca	agg	gac	cct	cag	tat	gat	ggg	cga	cta	tta	gaa	gag	gct	tta	aag	1627
Ser	Arg	Asp	Pro	Gln	Tyr	Asp	Gly	Arg	Leu	Leu	Glu	Glu	Ala	Leu	Lys	
				455		460				465					470	
aaa	aag	ggg	tcg	ggc	gag	aga	agg	agg	gtt	tac	agg	gag	gaa	gaa	gag	1675
Lys	Lys	Gly	Ser	Gly	Glu	Arg	Arg	Arg	Val	Tyr	Arg	Glu	Glu	Glu	Glu	
				475					480					485		
gaa	gag	gag	ggc	caa	tac	ccc	cca	gca	cct	cca	cct	tac	tca	gag	act	1723
Glu	Glu	Glu	Gly	Gln	Tyr	Pro	Pro	Ala	Pro	Pro	Pro	Tyr	Ser	Glu	Thr	
			490					495				500				
gac	tcg	cag	gcc	tca	cgg	gag	agg	agg	ctg	aaa	aag	aat	ttg	gcc	ctg	1771
Asp	Ser	Gln	Ala	Ser	Arg	Glu	Arg	Arg	Leu	Lys	Lys	Asn	Leu	Ala	Leu	
		505				510						515				
agt	cgg	gaa	agt	tta	gtc	gtc	tga	tccacgtttt	gtatgtagct	tttgtacttt						1825
Ser	Arg	Glu	Ser	Leu	Val	*										
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aaaaaaaa

1893

<210> 13
 <211> 525
 <212> PRT
 <213> Rattus norvegicus

<400> 13
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 Pro Ala Ser Ala Ile Gln Val Thr Val Ser Asp Pro Tyr His Val Val
 35 40 45
 Ile Leu Phe Gln Pro Val Thr Leu Pro Cys Thr Tyr Gln Met Ser Asn
 50 55 60
 Thr Leu Thr Val Pro Ile Val Ile Trp Lys Tyr Lys Ser Phe Cys Arg
 65 70 75 80
 Asp Arg Ile Ala Asp Ala Phe Ser Pro Ala Ser Val Asp Asn Gln Leu
 85 90 95
 Asn Ala Gln Leu Ala Ala Gly Asn Pro Gly Tyr Asn Pro Tyr Val Glu
 100 105 110
 Cys Gln Asp Ser Val Arg Thr Val Arg Val Val Ala Thr Lys Gln Gly
 115 120 125
 Asn Ala Val Thr Leu Gly Asp Tyr Tyr Gln Gly Arg Arg Ile Thr Ile
 130 135 140
 Thr Gly Asn Ala Asp Leu Thr Phe Glu Gln Thr Ala Trp Gly Asp Ser
 145 150 155 160
 Gly Val Tyr Tyr Cys Ser Val Val Ser Ala Gln Asp Leu Asp Gly Asn
 165 170 175
 Asn Glu Ala Tyr Ala Glu Leu Ile Val Leu Val Tyr Ala Ala Gly Lys
 180 185 190
 Ala Ala Thr Ser Gly Val Pro Ser Ile Tyr Ala Pro Ser Ile Tyr Thr
 195 200 205
 His Leu Ser Pro Ala Lys Thr Pro Pro Pro Pro Ala Met Ile Pro
 210 215 220
 Met Gly Pro Pro Tyr Gly Tyr Pro Gly Asp Phe Asp Arg His Ser Ser
 225 230 235 240
 Val Gly Gly His Ser Ser Gln Val Pro Leu Leu Arg Asp Val Asp Gly
 245 250 255
 Ser Val Ser Ser Glu Val Arg Ser Gly Tyr Arg Ile Gln Ala Asn Gln
 260 265 270
 Gln Asp Asp Ser Met Arg Val Leu Tyr Tyr Met Glu Lys Glu Leu Ala
 275 280 285
 Asn Phe Asp Pro Ser Arg Pro Gly Pro Pro Asn Gly Arg Val Glu Arg
 290 295 300
 Ala Met Ser Glu Val Thr Ser Leu His Glu Asp Asp Trp Arg Ser Arg
 305 310 315 320
 Pro Ser Arg Ala Pro Ala Leu Thr Pro Ile Arg Asp Glu Glu Trp Asn
 325 330 335
 Arg His Ser Pro Gln Ser Pro Arg Thr Trp Glu Gln Glu Pro Leu Gln
 340 345 350
 Glu Gln Pro Arg Gly Gly Trp Gly Ser Gly Arg Pro Arg Ala Arg Ser
 355 360 365
 Val Asp Ala Leu Asp Asp Ile Asn Arg Pro Gly Ser Thr Glu Ser Gly
 370 375 380
 Arg Ser Ser Pro Pro Ser Ser Gly Arg Arg Gly Arg Ala Tyr Ala Pro
 385 390 395 400
 Pro Arg Ser Arg Ser Arg Asp Asp Leu Tyr Asp Pro Asp Asp Pro Arg
 405 410 415
 Asp Leu Pro His Ser Arg Asp Pro His Tyr Tyr Asp Asp Ile Arg Ser
 420 425 430
 Arg Asp Pro Arg Ala Asp Pro Arg Ser Arg Gln Arg Ser Arg Asp Pro

435	440	445
Arg Asp Ala Gly Phe Arg Ser Arg Asp Pro Gln Tyr Asp Gly Arg Leu		
450	455	460
Leu Glu Glu Ala Leu Lys Lys Lys Gly Ser Gly Glu Arg Arg Arg Val		
465	470	475
Tyr Arg Glu Glu Glu Glu Glu Glu Gly Gln Tyr Pro Pro Ala Pro		480
	485	490
Pro Pro Tyr Ser Glu Thr Asp Ser Gln Ala Ser Arg Glu Arg Arg Leu		495
	500	505
Lys Lys Asn Leu Ala Leu Ser Arg Glu Ser Leu Val Val		510
515	520	525

<210> 14
 <211> 1886
 <212> DNA
 <213> Mus musculus

<400> 14

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Gly Ala Pro Gly Ser His Pro Ala Thr Thr Ile Phe Val Cys Leu Phe	
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Leu Ile Ile Tyr Cys Pro Asp Arg Ala Ser Ala Ile Gln Val Thr Val	
30 35 40	
cct gac ccc tac cac gta gtg atc ctg ttc cag cca gtg aca cta cac	196
Pro Asp Pro Tyr His Val Val Ile Leu Phe Gln Pro Val Thr Leu His	
45 50 55	
tgc acc tac cag atg agc aat acc ctc aca gcc cct atc gtg atc tgg	244
Cys Thr Tyr Gln Met Ser Asn Thr Leu Thr Ala Pro Ile Val Ile Trp	
60 65 70	
aag tat aag tgc ttc tgt cgg gac cgt gtt gcc gac gcc ttc tcc cct	292
Lys Tyr Lys Ser Phe Cys Arg Asp Arg Val Ala Asp Ala Phe Ser Pro	
75 80 85	
gcc agc gtg gac aac cag ctc aac gcc cag ctg gcg gct ggc aac ccc	340
Ala Ser Val Asp Asn Gln Leu Asn Ala Gln Leu Ala Ala Gly Asn Pro	
90 95 100 105	
ggc tac aac ccc tat gtg gag tgc cag gac agc gta cgc act gtc agg	388
Gly Tyr Asn Pro Tyr Val Glu Cys Gln Asp Ser Val Arg Thr Val Arg	
110 115 120	
gtg gtg gcc acc aaa cag ggc aat gct gtg acc ctg gga gac tac tac	436
Val Val Ala Thr Lys Gln Gly Asn Ala Val Thr Leu Gly Asp Tyr Tyr	
125 130 135	
cag ggc agg aga atc acc atc aca gga aat gct ggc ctg acc ttc gag	484
Gln Gly Arg Arg Ile Thr Ile Thr Gly Asn Ala Gly Leu Thr Phe Glu	
140 145 150	
cag acg gcc tgg gga gac agt gga gtg tat tac tgc tcc gtg gtc tca	532
Gln Thr Ala Trp Gly Asp Ser Gly Val Tyr Tyr Cys Ser Val Val Ser	
155 160 165	
gcc caa gat ctg gat ggg aac aac gag gcg tac gca gag ctc att gtc	580
Ala Gln Asp Leu Asp Gly Asn Asn Glu Ala Tyr Ala Glu Leu Ile Val	
170 175 180 185	
ctt ggc agg acc tca gaa gcc cct gag ctc cta cct ggt ttt cgg gcg	628
Leu Gly Arg Thr Ser Glu Ala Pro Glu Leu Leu Pro Gly Phe Arg Ala	
190 195 200	
ggg ccc ttg gaa gat tgg ctc ttt gtg gtc gtg gtc tgc ctg gca agc	676
Gly Pro Leu Glu Asp Trp Leu Phe Val Val Val Val Cys Leu Ala Ser	
205 210 215	
ctc ctc ttc ttc ctc ctc ctg ggc atc tgc tgg tgc cag tgc tgt ccc	724
Leu Leu Phe Phe Leu Leu Leu Gly Ile Cys Trp Cys Gln Cys Cys Pro	
220 225 230	

cac acc tgc tgc tgc tat gtc aga tgt ccc tgc tgc cca gac aag tgc	772
His Thr Cys Cys Cys Tyr Val Arg Cys Pro Cys Cys Pro Asp Lys Cys	
235 240 245	
tgt tgc cct gag gcc ctt tat gct gct ggc aaa gca gcc acc tca ggt	820
Cys Cys Pro Glu Ala Leu Tyr Ala Ala Gly Lys Ala Ala Thr Ser Gly	
250 255 260 265	
gtg cca agc atc tat gcc ccc agc atc tat acc cac ctc tct cct gcc	868
Val Pro Ser Ile Tyr Ala Pro Ser Ile Tyr Thr His Leu Ser Pro Ala	
270 275 280	
aag act ccg cca cct ccg cct gcc atg att ccc atg cgt cct ccc tat	916
Lys Thr Pro Pro Pro Pro Pro Ala Met Ile Pro Met Arg Pro Pro Tyr	
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Gly Tyr Pro Gly Asp Phe Asp Arg Thr Ser Ser Val Gly Gly His Ser	
300 305 310	
tcc cag gtg ccc ctg ctg cgt gaa gtg gat ggg agc gta tct tca gaa	1012
Ser Gln Val Pro Leu Leu Arg Glu Val Asp Gly Ser Val Ser Ser Glu	
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Val Arg Ser Gly Tyr Arg Ile Gln Ala Asn Gln Gln Asp Asp Ser Met	
330 335 340 345	
agg gtc cta tac tat atg gag aag gag cta gcc aac ttc gat cct tcc	1108
Arg Val Leu Tyr Tyr Met Glu Lys Glu Leu Ala Asn Phe Asp Pro Ser	
350 355 360	
cgg cct ggc cct ccc aat ggc cga gtg gaa cgg gcc atg agt gaa gta	1156
Arg Pro Gly Pro Pro Asn Gly Arg Val Glu Arg Ala Met Ser Glu Val	
365 370 375	
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Thr Ser Leu His Glu Asp Asp Trp Arg Ser Arg Pro Ser Arg Ala Pro	
380 385 390	
gcc ctc aca ccc atc agg gat gag gag tgg aat cgc cac tcc cct cgg	1252
Ala Leu Thr Pro Ile Arg Asp Glu Glu Trp Asn Arg His Ser Pro Arg	
395 400 405	
agt ccc aga aca tgg gag cag gaa ccc ctt caa gaa cag cca agg ggt	1300
Ser Pro Arg Thr Trp Glu Gln Glu Pro Leu Gln Glu Gln Pro Arg Gly	
410 415 420 425	
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Gly Trp Gly Ser Gly Arg Pro Arg Ala Arg Ser Val Asp Ala Leu Asp	
430 435 440	
gac atc aac cgg cct ggc tcc act gaa tca gga agg tct tct ccc cca	1396
Asp Ile Asn Arg Pro Gly Ser Thr Glu Ser Gly Arg Ser Ser Pro Pro	
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Ser Ser Gly Arg Arg Gly Arg Ala Tyr Ala Pro Pro Arg Ser Arg Ser	
460 465 470	
cgg gat gac ctc tat gac ccc gac gat cct aga gac ttg cca cat tcc	1492
Arg Asp Asp Leu Tyr Asp Pro Asp Asp Pro Arg Asp Leu Pro His Ser	
475 480 485	
cga gat ccc cac tat tat gat gat ttg agg tct agg gat cca cgt gct	1540
Arg Asp Pro His Tyr Tyr Asp Asp Leu Arg Ser Arg Asp Pro Arg Ala	
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gac ccc aga tcc cgt cag cga tcc cac gat cct cgg gat gct ggc ttc	1588
Asp Pro Arg Ser Arg Gln Arg Ser His Asp Pro Arg Asp Ala Gly Phe	
510 515 520	
agg tca cgg gac cct cag tat gat ggg cga ctc tta gaa gag gct tta	1636
Arg Ser Arg Asp Pro Gln Tyr Asp Gly Arg Leu Leu Glu Glu Ala Leu	
525 530 535	
aag aaa aaa ggg gct ggg gag aga aga cgc gtt tac agg gag gaa gaa	1684
Lys Lys Lys Gly Ala Gly Glu Arg Arg Arg Val Tyr Arg Glu Glu Glu	
540 545 550	
gaa gaa gaa gag gag ggc cac tat ccc cca gca cct ccg cct tac tct	1732
Glu Glu Glu Glu Glu Gly His Tyr Pro Pro Ala Pro Pro Pro Tyr Ser	
555 560 565	

gag act gac tcg cag gcc tcg agg gag cgg agg atg aaa aag aat ttg 1780
Glu Thr Asp Ser Gln Ala Ser Arg Glu Arg Arg Met Lys Lys Asn Leu
570 575 580 585
gcc ctg agt cgg gaa agt tta gtc gtc tga tccccacgttt tgttatgtag 1830
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Gly Ala Pro Gly Ser His Pro Ala Thr Thr Ile Phe Val Cys Leu Phe
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Leu Ile Ile Tyr Cys Pro Asp Arg Ala Ser Ala Ile Gln Val Thr Val
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Pro Asp Pro Tyr His Val Val Ile Leu Phe Gln Pro Val Thr Leu His
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tgc acc tac cag atg agc aat acc ctc aca gcc cct atc gtg atc tgg 244
Cys Thr Tyr Gln Met Ser Asn Thr Leu Thr Ala Pro Ile Val Ile Trp
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aag tat aag tcg ttc tgt cgg gac cgt gtt gcc gac gcc ttc tcc cct 292
Lys Tyr Lys Ser Phe Cys Arg Asp Arg Val Ala Asp Ala Phe Ser Pro
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gcc agc gtg gac aac cag ctc aac gcc cag ctg gcg gct ggc aac ccc 340
Ala Ser Val Asp Asn Gln Leu Asn Ala Gln Leu Ala Ala Gly Asn Pro
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Gly Tyr Asn Pro Tyr Val Glu Cys Gln Asp Ser Val Arg Thr Val Arg
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gtg gtg gcc acc aaa cag ggc aat gct gtg acc ctg gga gac tac tac 436
Val Val Ala Thr Lys Gln Gly Asn Ala Val Thr Leu Gly Asp Tyr Tyr
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cag ggc agg aga atc acc atc aca gga aat gct ggc ctg acc ttc gag 484
Gln Gly Arg Arg Ile Thr Ile Thr Gly Asn Ala Gly Leu Thr Phe Glu
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Gln Thr Ala Trp Gly Asp Ser Gly Val Tyr Tyr Cys Ser Val Val Ser
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gcc caa gat ctg gat ggg aac aac gag gcg tac gca gag ctc att gtc 580
Ala Gln Asp Leu Asp Gly Asn Asn Glu Ala Tyr Ala Glu Leu Ile Val
170 175 180 185
ctt gat tgg ctc ttt gtg gtc gtg gtc tgc ctg gca agc ctc ctc ttc 628
Leu Asp Trp Leu Phe Val Val Val Val Cys Leu Ala Ser Leu Leu Phe
190 195 200
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Phe Leu Leu Leu Gly Ile Cys Trp Cys Gln Cys Cys Pro His Thr Cys
205 210 215
tgc tgc tat gtc aga tgt ccc tgc tgc cca gac aag tgc tgt tgc cct 724
Cys Cys Tyr Val Arg Cys Pro Cys Cys Pro Asp Lys Cys Cys Cys Pro
220 225 230
gag gcc ctt tat gct gct ggc aaa gca gcc acc tca ggt gtg cca agc 772
Glu Ala Leu Tyr Ala Ala Gly Lys Ala Ala Thr Ser Gly Val Pro Ser
235 240 245
atc tat gcc ccc agc atc tat acc cac ctc tct cct gcc aag act ccg 820

Ile Tyr Ala Pro Ser Ile Tyr Thr His Leu Ser Pro Ala Lys Thr Pro	
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Pro Pro Pro Pro Ala Met Ile Pro Met Arg Pro Pro Tyr Gly Tyr Pro	
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Gly Asp Phe Asp Arg Thr Ser Ser Val Gly Gly His Ser Ser Gln Val	
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ccc ctg ctg cgt gaa gtg gat ggg agc gta tct tca gaa gta cga agt	964
Pro Leu Leu Arg Glu Val Asp Gly Ser Val Ser Ser Glu Val Arg Ser	
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ggc tac agg atc cag gct aac cag caa gat gac tcc atg agg gtc cta	1012
Gly Tyr Arg Ile Gln Ala Asn Gln Gln Asp Asp Ser Met Arg Val Leu	
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Tyr Tyr Met Glu Lys Glu Leu Ala Asn Phe Asp Pro Ser Arg Pro Gly	
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Pro Pro Asn Gly Arg Val Glu Arg Ala Met Ser Glu Val Thr Ser Leu	
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His Glu Asp Asp Trp Arg Ser Arg Pro Ser Arg Ala Pro Ala Leu Thr	
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Pro Ile Arg Asp Glu Glu Trp Asn Arg His Ser Pro Arg Ser Pro Arg	
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Thr Trp Glu Gln Glu Pro Leu Gln Glu Gln Pro Arg Gly Gly Trp Gly	
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Ser Gly Arg Pro Arg Ala Arg Ser Val Asp Ala Leu Asp Asp Ile Asn	
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Arg Pro Gly Ser Thr Glu Ser Gly Arg Ser Ser Pro Pro Ser Ser Gly	
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Arg Arg Gly Arg Ala Tyr Ala Pro Pro Arg Ser Arg Ser Arg Asp Asp	
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ctc tat gac ccc gac gat cct aga gac ttg cca cat tcc cga gat ccc	1444
Leu Tyr Asp Pro Asp Asp Pro Arg Asp Leu Pro His Ser Arg Asp Pro	
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cac tat tat gat gat ttg agg tct agg gat cca cgt gct gac ccc aga	1492
His Tyr Tyr Asp Asp Leu Ser Arg Asp Pro Arg Ala Asp Pro Arg	
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Ser Arg Gln Arg Ser His Asp Pro Arg Asp Ala Gly Phe Arg Ser Arg	
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Asp Pro Gln Tyr Asp Gly Arg Leu Leu Glu Glu Ala Leu Lys Lys Lys	
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Gly Ala Gly Glu Arg Arg Arg Val Tyr Arg Glu Glu Glu Glu Glu Glu	
525 530 535	
gag gag ggc cac tat ccc cca gca cct ccg cct tac tct gag act gac	1684
Glu Glu Gly His Tyr Pro Pro Ala Pro Pro Pro Tyr Ser Glu Thr Asp	
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tcg cag gcc tcg agg gag cgg agg atg aaa aag aat ttg gcc ctg agt	1732
Ser Gln Ala Ser Arg Glu Arg Arg Met Lys Lys Asn Leu Ala Leu Ser	
555 560 565	
cgg gaa agt tta gtc gtc tga tccccagttt tgttatgtag cttttatact	1783
Arg Glu Ser Leu Val Val *	
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Gly	Ala	Pro	Gly	Ser	His	Pro	Ala	Thr	Thr	Ile	Phe	Val	Cys	Leu	Phe	
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ctc	atc	att	tac	tgc	cca	gac	cgt	gcc	agt	gcc	atc	cag	gtg	acc	gtg	148
Leu	Ile	Ile	Tyr	Cys	Pro	Asp	Arg	Ala	Ser	Ala	Ile	Gln	Val	Thr	Val	
				30					35					40		
cct	gac	ccc	tac	cac	gta	gtg	atc	ctg	ttc	cag	cca	gtg	aca	cta	cac	196
Pro	Asp	Pro	Tyr	His	Val	Val	Ile	Leu	Phe	Gln	Pro	Val	Thr	Leu	His	
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tgc	acc	tac	cag	atg	agc	aat	acc	ctc	aca	gcc	cct	atc	gtg	atc	tgg	244
Cys	Thr	Tyr	Gln	Met	Ser	Asn	Thr	Leu	Thr	Ala	Pro	Ile	Val	Ile	Trp	
		60					65				70					
aag	tat	aag	tcg	ttc	tgt	cgg	gac	cgt	gtt	gcc	gac	gcc	ttc	tcc	cct	292
Lys	Tyr	Lys	Ser	Phe	Cys	Arg	Asp	Arg	Val	Ala	Asp	Ala	Phe	Ser	Pro	
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gcc	agc	gtg	gac	aac	cag	ctc	aac	gcc	cag	ctg	gcg	gct	ggc	aac	ccc	340
Ala	Ser	Val	Asp	Asn	Gln	Leu	Asn	Ala	Gln	Leu	Ala	Ala	Gly	Asn	Pro	
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ggc	tac	aac	ccc	tat	gtg	gag	tgc	cag	gac	agc	gta	cgc	act	gtc	agg	388
Gly	Tyr	Asn	Pro	Tyr	Val	Glu	Cys	Gln	Asp	Ser	Val	Arg	Thr	Val	Arg	
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gtg	gtg	gcc	acc	aaa	cag	ggc	aat	gct	gtg	acc	ctg	gga	gac	tac	tac	436
Val	Val	Ala	Thr	Lys	Gln	Gly	Asn	Ala	Val	Thr	Leu	Gly	Asp	Tyr	Tyr	
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cag	ggc	agg	aga	atc	acc	atc	aca	gga	aat	gct	ggc	ctg	acc	ttc	gag	484
Gln	Gly	Arg	Arg	Ile	Thr	Ile	Thr	Gly	Asn	Ala	Gly	Leu	Thr	Phe	Glu	
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Gln	Thr	Ala	Trp	Gly	Asp	Ser	Gly	Val	Tyr	Tyr	Cys	Ser	Val	Val	Ser	
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gcc	caa	gat	ctg	gat	ggg	aac	aac	gag	gcg	tac	gca	gag	ctc	att	gtc	580
Ala	Gln	Asp	Leu	Asp	Gly	Asn	Asn	Glu	Ala	Tyr	Ala	Glu	Leu	Ile	Val	
170					175					180				185		
ctt	gtt	tat	gct	gct	ggc	aaa	gca	gcc	acc	tca	ggt	gtg	cca	agc	atc	628
Leu	Val	Tyr	Ala	Ala	Gly	Lys	Ala	Ala	Thr	Ser	Gly	Val	Pro	Ser	Ile	
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tat	gcc	ccc	agc	atc	tat	acc	cac	ctc	tct	cct	gcc	aag	act	ccg		

	285		290		295		
ccc aat ggc cga gtg gaa cgg gcc atg agt gaa gta acc tcc ctc cat							964
Pro Asn Gly Arg Val Glu Arg Ala Met Ser Glu Val Thr Ser Leu His							
	300		305		310		
gaa gat gac tgg cga tct cgg cct tcc agg gct cct gcc ctc aca ccc							1012
Glu Asp Asp Trp Arg Ser Arg Pro Ser Arg Ala Pro Ala Leu Thr Pro							
	315		320		325		
atc agg gat gag gag tgg aat cgc cac tcc cct cgg agt ccc aga aca							1060
Ile Arg Asp Glu Glu Trp Asn Arg His Ser Pro Arg Ser Pro Arg Thr							
	330		335		340		345
tgg gag cag gaa ccc ctt caa gaa cag cca agg ggt ggt tgg ggg tct							1108
Trp Glu Gln Glu Pro Leu Gln Glu Gln Pro Arg Gly Gly Trp Gly Ser							
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ggg cgg cct cgg gcc cgc tct gtg gat gct cta gat gac atc aac cgg							1156
Gly Arg Pro Arg Ala Arg Ser Val Asp Ala Leu Asp Asp Ile Asn Arg							
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cct ggc tcc act gaa tca gga agg tct tct ccc cca agt agt gga cgg							1204
Pro Gly Ser Thr Glu Ser Gly Arg Ser Ser Pro Pro Ser Ser Gly Arg							
	380		385		390		
aga ggg cgg gcc tat gca cct ccg aga agt cgc agc cgg gat gac ctc							1252
Arg Gly Arg Ala Tyr Ala Pro Pro Arg Ser Arg Ser Arg Asp Asp Leu							
	395		400		405		
tat gac ccc gac gat cct aga gac ttg cca cat tcc cga gat ccc cac							1300
Tyr Asp Pro Asp Asp Pro Arg Asp Leu Pro His Ser Arg Asp Pro His							
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tat tat gat gat ttg agg tct agg gat cca cgt gct gac ccc aga tcc							1348
Tyr Tyr Asp Asp Leu Arg Ser Arg Asp Pro Arg Ala Asp Pro Arg Ser							
	430		435		440		
cgt cag cga tcc cac gat cct cgg gat gct ggc ttc agg tca cgg gac							1396
Arg Gln Arg Ser His Asp Pro Arg Asp Ala Gly Phe Arg Ser Arg Asp							
	445		450		455		
cct cag tat gat ggg cga ctc tta gaa gag gct tta aag aaa aaa ggg							1444
Pro Gln Tyr Asp Gly Arg Leu Leu Glu Glu Ala Leu Lys Lys Lys Gly							
	460		465		470		
gct ggg gag aga aga cgc gtt tac agg gag gaa gaa gaa gaa gag							1492
Ala Gly Glu Arg Arg Arg Val Tyr Arg Glu Glu Glu Glu Glu Glu Glu							
	475		480		485		
gag ggc cac tat ccc cca gca cct ccg cct tac tct gag act gac tcg							1540
Glu Gly His Tyr Pro Pro Ala Pro Pro Pro Tyr Ser Glu Thr Asp Ser							
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cag gcc tcg agg gag cgg agg atg aaa aag aat ttg gcc ctg agt cgg							1588
Gln Ala Ser Arg Glu Arg Arg Met Lys Lys Asn Leu Ala Leu Ser Arg							
	510		515		520		
gaa agt tta gtc tga tccacgttt tggtatgtag cttttatact							1636
Glu Ser Leu Val Val *							
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<212> PRT

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<400> 17

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Arg Ala Ser Ala Ile Gln Val Thr Val Pro Asp Pro Tyr His Val Val														
			35				40				45			
Ile Leu Phe Gln Pro Val Thr Leu His Cys Thr Tyr Gln Met Ser Asn														
			50				55				60			
Thr Leu Thr Ala Pro Ile Val Ile Trp Lys Tyr Lys Ser Phe Cys Arg														

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Asp	Arg	Val	Ala	Asp	Ala	Phe	Ser	Pro	Ala	Ser	Val	Asp	Asn	Gln
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Asn	Ala	Gln	Leu	Ala	Ala	Gly	Asn	Pro	Gly	Tyr	Asn	Pro	Tyr	Val
			100					105					110	
Cys	Gln	Asp	Ser	Val	Arg	Thr	Val	Arg	Val	Val	Ala	Thr	Lys	Gln
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Asn	Ala	Val	Thr	Leu	Gly	Asp	Tyr	Tyr	Gln	Gly	Arg	Arg	Ile	Thr
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Thr	Gly	Asn	Ala	Gly	Leu	Thr	Phe	Glu	Gln	Thr	Ala	Trp	Gly	Asp
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Gly	Val	Tyr	Tyr	Cys	Ser	Val	Val	Ser	Ala	Gln	Asp	Leu	Asp	Gly
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Asn	Glu	Ala	Tyr	Ala	Glu	Leu	Ile	Val	Leu	Gly	Arg	Thr	Ser	Glu
		180						185					190	Ala
Pro	Glu	Leu	Leu	Pro	Gly	Phe	Arg	Ala	Gly	Pro	Leu	Glu	Asp	Trp
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Phe	Val	Val	Val	Cys	Leu	Ala	Ser	Leu	Leu	Phe	Phe	Leu	Leu	Leu
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Gly	Ile	Cys	Trp	Cys	Gln	Cys	Cys	Pro	His	Thr	Cys	Cys	Cys	Tyr
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Arg	Cys	Pro	Cys	Cys	Pro	Asp	Lys	Cys	Cys	Cys	Pro	Glu	Ala	Leu
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Ala	Ala	Gly	Lys	Ala	Ala	Thr	Ser	Gly	Val	Pro	Ser	Ile	Tyr	Ala
			260					265					270	Pro
Ser	Ile	Tyr	Thr	His	Leu	Ser	Pro	Ala	Lys	Thr	Pro	Pro	Pro	Pro
		275					280				285			
Ala	Met	Ile	Pro	Met	Arg	Pro	Pro	Tyr	Gly	Tyr	Pro	Gly	Asp	Phe
		290				295					300			Asp
Arg	Thr	Ser	Ser	Val	Gly	Gly	His	Ser	Ser	Gln	Val	Pro	Leu	Leu
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Glu	Val	Asp	Gly	Ser	Val	Ser	Ser	Glu	Val	Arg	Ser	Gly	Tyr	Arg
				325					330					335
Gln	Ala	Asn	Gln	Gln	Asp	Asp	Ser	Met	Arg	Val	Leu	Tyr	Tyr	Met
				340				345				350		Glu
Lys	Glu	Leu	Ala	Asn	Phe	Asp	Pro	Ser	Arg	Pro	Gly	Pro	Pro	Asn
		355					360					365		Gly
Arg	Val	Glu	Arg	Ala	Met	Ser	Glu	Val	Thr	Ser	Leu	His	Glu	Asp
		370				375					380			Asp
Trp	Arg	Ser	Arg	Pro	Ser	Arg	Ala	Pro	Ala	Leu	Thr	Pro	Ile	Arg
385					390					395				400
Glu	Glu	Trp	Asn	Arg	His	Ser	Pro	Arg	Ser	Pro	Arg	Thr	Trp	Glu
				405					410					415
Glu	Pro	Leu	Gln	Glu	Gln	Pro	Arg	Gly	Gly	Trp	Gly	Ser	Gly	Arg
				420				425					430	Pro
Arg	Ala	Arg	Ser	Val	Asp	Ala	Leu	Asp	Asp	Ile	Asn	Arg	Pro	Gly
		435				440					445			Ser
Thr	Glu	Ser	Gly	Arg	Ser	Ser	Pro	Pro	Ser	Ser	Gly	Arg	Arg	Gly
		450				455					460			Arg
Ala	Tyr	Ala	Pro	Pro	Arg	Ser	Arg	Ser	Arg	Asp	Asp	Leu	Tyr	Asp
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Asp	Asp	Pro	Arg	Asp	Leu	Pro	His	Ser	Arg	Asp	Pro	His	Tyr	Tyr
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Asp	Leu	Arg	Ser	Arg	Asp	Pro	Arg	Ala	Asp	Pro	Arg	Ser	Arg	Gln
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Ser	His	Asp	Pro	Arg	Asp	Ala	Gly	Phe	Arg	Ser	Arg	Asp	Pro	Gln
		515				520						525		Tyr
Asp	Gly	Arg	Leu	Leu	Glu	Glu	Ala	Leu	Lys	Lys	Lys	Gly	Ala	Gly
		530				535					540			Glu
Arg	Arg	Arg	Val	Tyr	Arg	Glu	Glu	Glu	Glu	Glu	Glu	Glu	Glu	Gly
545					550				555					His
Tyr	Pro	Pro	Ala	Pro	Pro	Pro	Tyr	Ser	Glu	Thr	Asp	Ser	Gln	Ala
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Val Val

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<213> Mus musculus

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Ile Leu Phe Gln Pro Val Thr Leu His Cys Thr Tyr Gln Met Ser Asn
50 55 60
Thr Leu Thr Ala Pro Ile Val Ile Trp Lys Tyr Lys Ser Phe Cys Arg
65 70 75 80
Asp Arg Val Ala Asp Ala Phe Ser Pro Ala Ser Val Asp Asn Gln Leu
85 90 95
Asn Ala Gln Leu Ala Ala Gly Asn Pro Gly Tyr Asn Pro Tyr Val Glu
100 105 110
Cys Gln Asp Ser Val Arg Thr Val Arg Val Val Ala Thr Lys Gln Gly
115 120 125
Asn Ala Val Thr Leu Gly Asp Tyr Tyr Gln Gly Arg Arg Ile Thr Ile
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Thr Gly Asn Ala Gly Leu Thr Phe Glu Gln Thr Ala Trp Gly Asp Ser
145 150 155 160
Gly Val Tyr Tyr Cys Ser Val Val Ser Ala Gln Asp Leu Asp Gly Asn
165 170 175
Asn Glu Ala Tyr Ala Glu Leu Ile Val Leu Asp Trp Leu Phe Val Val
180 185 190
Val Val Cys Leu Ala Ser Leu Leu Phe Phe Leu Leu Leu Gly Ile Cys
195 200 205
Trp Cys Gln Cys Cys Pro His Thr Cys Cys Cys Tyr Val Arg Cys Pro
210 215 220
Cys Cys Pro Asp Lys Cys Cys Cys Pro Glu Ala Leu Tyr Ala Ala Gly
225 230 235 240
Lys Ala Ala Thr Ser Gly Val Pro Ser Ile Tyr Ala Pro Ser Ile Tyr
245 250 255
Thr His Leu Ser Pro Ala Lys Thr Pro Pro Pro Pro Pro Ala Met Ile
260 265 270
Pro Met Arg Pro Pro Tyr Gly Tyr Pro Gly Asp Phe Asp Arg Thr Ser
275 280 285
Ser Val Gly Gly His Ser Ser Gln Val Pro Leu Leu Arg Glu Val Asp
290 295 300
Gly Ser Val Ser Ser Glu Val Arg Ser Gly Tyr Arg Ile Gln Ala Asn
305 310 315 320
Gln Gln Asp Asp Ser Met Arg Val Leu Tyr Tyr Met Glu Lys Glu Leu
325 330 335
Ala Asn Phe Asp Pro Ser Arg Pro Gly Pro Pro Asn Gly Arg Val Glu
340 345 350
Arg Ala Met Ser Glu Val Thr Ser Leu His Glu Asp Asp Trp Arg Ser
355 360 365
Arg Pro Ser Arg Ala Pro Ala Leu Thr Pro Ile Arg Asp Glu Glu Trp
370 375 380
Asn Arg His Ser Pro Arg Ser Pro Arg Thr Trp Glu Gln Glu Pro Leu
385 390 395 400
Gln Glu Gln Pro Arg Gly Gly Trp Gly Ser Gly Arg Pro Arg Ala Arg
405 410 415
Ser Val Asp Ala Leu Asp Asp Ile Asn Arg Pro Gly Ser Thr Glu Ser

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Pro	Pro	Arg	Ser	Arg	Ser	Arg	Asp	Asp	Leu	Tyr	Asp	Pro	Asp	Asp	Pro				
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Arg	Asp	Leu	Pro	His	Ser	Arg	Asp	Pro	His	Tyr	Tyr	Asp	Asp	Leu	Arg				
465					470					475				480					
Ser	Arg	Asp	Pro	Arg	Ala	Asp	Pro	Arg	Ser	Arg	Gln	Arg	Ser	His	Asp				
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Pro	Arg	Asp	Ala	Gly	Phe	Arg	Ser	Arg	Asp	Pro	Gln	Tyr	Asp	Gly	Arg				
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Leu	Leu	Glu	Glu	Ala	Leu	Lys	Lys	Lys	Gly	Ala	Gly	Glu	Arg	Arg	Arg				
		515					520					525							
Val	Tyr	Arg	Glu	Glu	Glu	Glu	Glu	Glu	Glu	Glu	Gly	His	Tyr	Pro	Pro				
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Ala	Pro	Pro	Pro	Tyr	Ser	Glu	Thr	Asp	Ser	Gln	Ala	Ser	Arg	Glu	Arg				
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Arg	Ala	Ser	Ala	Ile	Gln	Val	Thr	Val	Pro	Asp	Pro	Tyr	His	Val	Val				
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Ile	Leu	Phe	Gln	Pro	Val	Thr	Leu	His	Cys	Thr	Tyr	Gln	Met	Ser	Asn				
	50					55					60								
Thr	Leu	Thr	Ala	Pro	Ile	Val	Ile	Trp	Lys	Tyr	Lys	Ser	Phe	Cys	Arg				
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Asp	Arg	Val	Ala	Asp	Ala	Phe	Ser	Pro	Ala	Ser	Val	Asp	Asn	Gln	Leu				
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Asn	Ala	Gln	Leu	Ala	Ala	Gly	Asn	Pro	Gly	Tyr	Asn	Pro	Tyr	Val	Glu				
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Cys	Gln	Asp	Ser	Val	Arg	Thr	Val	Arg	Val	Val	Ala	Thr	Lys	Gln	Gly				
		115					120					125							
Asn	Ala	Val	Thr	Leu	Gly	Asp	Tyr	Tyr	Gln	Gly	Arg	Arg	Ile	Thr	Ile				
	130					135					140								
Thr	Gly	Asn	Ala	Gly	Leu	Thr	Phe	Glu	Gln	Thr	Ala	Trp	Gly	Asp	Ser				
145					150				155					160					
Gly	Val	Tyr	Tyr	Cys	Ser	Val	Val	Ser	Ala	Gln	Asp	Leu	Asp	Gly	Asn				
				165				170						175					
Asn	Glu	Ala	Tyr	Ala	Glu	Leu	Ile	Val	Leu	Val	Tyr	Ala	Ala	Gly	Lys				
			180					185					190						
Ala	Ala	Thr	Ser	Gly	Val	Pro	Ser	Ile	Tyr	Ala	Pro	Ser	Ile	Tyr	Thr				
		195					200						205						
His	Leu	Ser	Pro	Ala	Lys	Thr	Pro	Pro	Pro	Pro	Pro	Pro	Ala	Met	Ile	Pro			
	210					215							220						
Met	Arg	Pro	Pro	Tyr	Gly	Tyr	Pro	Gly	Asp	Phe	Asp	Arg	Thr	Ser	Ser				
225					230					235				240					
Val	Gly	Gly	His	Ser	Ser	Gln	Val	Pro	Leu	Leu	Arg	Glu	Val	Asp	Gly				
			245					250						255					
Ser	Val	Ser	Ser	Glu	Val	Arg	Ser	Gly	Tyr	Arg	Ile	Gln	Ala	Asn	Gln				
			260					265					270						
Gln	Asp	Asp	Ser	Met	Arg	Val	Leu	Tyr	Tyr	Met	Glu	Lys	Glu	Leu	Ala				
	275						280					285							
Asn	Phe	Asp	Pro	Ser	Arg	Pro	Gly	Pro	Pro	Asn	Gly	Arg	Val	Glu	Arg				

290	295	300
Ala Met Ser Glu Val Thr Ser Leu His Glu Asp Asp Trp Arg Ser Arg		
305	310	315
Pro Ser Arg Ala Pro Ala Leu Thr Pro Ile Arg Asp Glu Glu Trp Asn		320
	325	330
Arg His Ser Pro Arg Ser Pro Arg Thr Trp Glu Gln Glu Pro Leu Gln		335
	340	345
Glu Gln Pro Arg Gly Gly Trp Gly Ser Gly Arg Pro Arg Ala Arg Ser		350
	355	360
Val Asp Ala Leu Asp Asp Ile Asn Arg Pro Gly Ser Thr Glu Ser Gly		365
	370	375
Arg Ser Ser Pro Pro Ser Ser Gly Arg Arg Gly Arg Ala Tyr Ala Pro		380
385	390	395
Pro Arg Ser Arg Ser Arg Asp Asp Leu Tyr Asp Pro Asp Asp Pro Arg		400
	405	410
Asp Leu Pro His Ser Arg Asp Pro His Tyr Tyr Asp Asp Leu Arg Ser		415
	420	425
Arg Asp Pro Arg Ala Asp Pro Arg Ser Arg Gln Arg Ser His Asp Pro		430
	435	440
Arg Asp Ala Gly Phe Arg Ser Arg Asp Pro Gln Tyr Asp Gly Arg Leu		445
	450	455
Leu Glu Glu Ala Leu Lys Lys Lys Gly Ala Gly Glu Arg Arg Arg Val		460
465	470	475
Tyr Arg Glu Glu Glu Glu Glu Glu Glu Gly His Tyr Pro Pro Ala		480
	485	490
Pro Pro Pro Tyr Ser Glu Thr Asp Ser Gln Ala Ser Arg Glu Arg Arg		495
	500	505
Met Lys Lys Asn Leu Ala Leu Ser Arg Glu Ser Leu Val Val		510
	515	520
		525

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<220>
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18

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<400> 21
 caggaaacag ctatgacc

18

<210> 22
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 <213> Artificial Sequence

<220>
 <223> oligonucleotide sense primer

<400> 22	
ctacaacccc tacgtcgagt	20
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<223> oligonucleotide anti sense primer	
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aggcggagat cgccagtcgt	20
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cctttgtcca cgtcgtttac gtc	24
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<223> oligonucleotide anti sense primer	
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tcacagcggt gccctgcttg	20
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<211> 21	
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<400> 26	
ttactgctcc gtggtctcag c	21
<210> 27	
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<400> 27	
agctactcct gtcaacgtct cc	22
<210> 28	
<211> 167	
<212> PRT	
<213> Bos taurus	

<400> 28

Met Arg Cys Gly Pro Leu Tyr Arg Phe Leu Trp Leu Trp Pro Tyr Leu
1 5 10 15
Ser Tyr Val Glu Ala Val Pro Ile Arg Lys Val Gln Asp Asp Thr Lys
20 25 30
Thr Leu Ile Lys Thr Ile Val Thr Arg Ile Asn Asp Ile Ser His Thr
35 40 45
Gln Ser Val Ser Ser Lys Gln Arg Val Thr Gly Leu Asp Phe Ile Pro
50 55 60
Gly Leu His Pro Leu Leu Ser Leu Ser Lys Met Asp Gln Thr Leu Ala
65 70 75 80
Ile Tyr Gln Gln Ile Leu Thr Ser Leu Pro Ser Arg Asn Val Val Gln
85 90 95
Ile Ser Asn Asp Leu Glu Asn Leu Arg Asp Leu Leu His Leu Leu Ala
100 105 110
Ala Ser Lys Ser Cys Pro Leu Pro Gln Val Arg Ala Leu Glu Ser Leu
115 120 125
Glu Ser Leu Gly Val Val Leu Glu Ala Ser Leu Tyr Ser Thr Glu Val
130 135 140
Val Ala Leu Ser Arg Leu Gln Gly Ser Leu Gln Asp Met Leu Arg Gln
145 150 155 160
Leu Asp Leu Ser Pro Gly Cys
165

<210> 29

<211> 146

<212> PRT

<213> Canis familiaris

<400> 29

Val Pro Ile Arg Lys Val Gln Asp Asp Thr Lys Thr Leu Ile Lys Thr
1 5 10 15
Ile Val Ala Arg Ile Asn Asp Ile Ser His Thr Gln Ser Val Ser Ser
20 25 30
Lys Gln Arg Val Ala Gly Leu Asp Phe Ile Pro Gly Leu Gln Pro Val
35 40 45
Leu Ser Leu Ser Arg Met Asp Gln Thr Leu Ala Ile Tyr Gln Gln Ile
50 55 60
Leu Asn Ser Leu His Ser Arg Asn Val Val Gln Ile Ser Asn Asp Leu
65 70 75 80
Glu Asn Leu Arg Asp Leu Leu His Leu Leu Ala Ser Ser Lys Ser Cys
85 90 95
Pro Leu Pro Arg Ala Arg Gly Leu Glu Thr Phe Glu Ser Leu Gly Gly
100 105 110
Val Leu Glu Ala Ser Leu Tyr Ser Thr Glu Val Val Ala Leu Ser Arg
115 120 125
Leu Gln Ala Ala Leu Gln Asp Met Leu Arg Arg Leu Asp Leu Ser Pro
130 135 140
Gly Cys
145

<210> 30

<211> 163

<212> PRT

<213> Gallus gallus

<400> 30

Met Cys Trp Arg Pro Leu Cys Arg Leu Trp Ser Tyr Leu Val Tyr Val
1 5 10 15
Gln Ala Val Pro Cys Gln Ile Phe Gln Asp Asp Thr Lys Thr Leu Ile
20 25 30
Lys Thr Ile Val Thr Arg Ile Asn Asp Ile Ser His Thr Ser Val Ser

Val Ala Leu Ser Arg Leu Gln Gly Ser Leu Gln Asp Ile Leu Gln Gln
 145 150 155 160
 Leu Asp Val Ser Pro Glu Cys
 165

<210> 35
 <211> 146
 <212> PRT
 <213> Ovus aries

<400> 35
 Val Pro Ile Arg Lys Val Gln Asp Asp Thr Lys Thr Leu Ile Lys Thr
 1 5 10 15
 Ile Val Thr Arg Ile Asn Asp Ile Ser His Thr Gln Ser Val Ser Ser
 20 25 30
 Lys Gln Arg Val Thr Gly Leu Asp Phe Ile Pro Gly Leu His Pro Leu
 35 40 45
 Leu Ser Leu Ser Lys Met Asp Gln Thr Leu Ala Ile Tyr Gln Gln Ile
 50 55 60
 Leu Ala Ser Leu Pro Ser Arg Asn Val Ile Gln Ile Ser Asn Asp Leu
 65 70 75 80
 Glu Asn Leu Arg Asp Leu Leu His Leu Leu Ala Ala Ser Lys Ser Cys
 85 90 95
 Pro Leu Pro Gln Val Arg Ala Leu Glu Ser Leu Glu Ser Leu Gly Val
 100 105 110
 Val Leu Glu Ala Ser Leu Tyr Ser Thr Glu Val Val Ala Leu Ser Arg
 115 120 125
 Leu Gln Gly Ser Leu Gln Asp Met Leu Arg Gln Leu Asp Leu Ser Pro
 130 135 140
 Gly Cys
 145

<210> 36
 <211> 146
 <212> PRT
 <213> Pan troglodytes

<400> 36
 Val Pro Ile Gln Lys Val Gln Asp Asp Thr Lys Thr Leu Ile Lys Thr
 1 5 10 15
 Ile Val Thr Arg Ile Asn Asp Ile Ser His Thr Gln Ser Val Ser Ser
 20 25 30
 Lys Gln Lys Val Thr Gly Leu Asp Phe Ile Pro Gly Leu His Pro Ile
 35 40 45
 Leu Thr Leu Ser Lys Met Asp Gln Thr Leu Ala Val Tyr Gln Gln Ile
 50 55 60
 Leu Thr Ser Met Pro Ser Arg Asn Met Ile Gln Ile Ser Asn Asp Leu
 65 70 75 80
 Glu Asn Leu Arg Asp Leu Leu His Val Leu Ala Phe Ser Lys Ser Cys
 85 90 95
 His Leu Pro Trp Ala Ser Gly Leu Glu Thr Leu Asp Ser Leu Gly Gly
 100 105 110
 Val Leu Glu Ala Ser Gly Tyr Ser Thr Glu Val Val Ala Leu Ser Arg
 115 120 125
 Leu Gln Gly Ser Leu Gln Asp Met Leu Trp Gln Leu Asp Leu Ser Pro
 130 135 140
 Gly Cys
 145

<210> 37
 <211> 146
 <212> PRT
 <213> Pongo pygmaeus

<400> 37

Val Pro Ile Gln Lys Val Gln Asp Asp Thr Lys Thr Leu Ile Lys Thr
1 5 10 15
Val Ile Thr Arg Ile Asn Asp Ile Ser His Thr Gln Ser Val Ser Ser
20 25 30
Lys Gln Lys Val Thr Gly Leu Asp Phe Ile Pro Gly Leu His Pro Ile
35 40 45
Leu Thr Leu Ser Lys Met Asp Gln Thr Leu Ala Val Tyr Gln Gln Ile
50 55 60
Leu Thr Ser Met Pro Ser Arg Asn Val Ile Gln Ile Ser Asn Asp Leu
65 70 75 80
Glu Asn Leu Arg Asp Leu Leu His Val Leu Ala Phe Ser Lys Ser Cys
85 90 95
His Leu Pro Trp Ala Ser Gly Leu Glu Thr Leu Asp Arg Leu Gly Gly
100 105 110
Val Leu Glu Ala Ser Gly Tyr Ser Thr Glu Val Val Ala Leu Ser Arg
115 120 125
Leu Gln Arg Ser Leu Gln Asp Met Leu Trp Gln Leu Asp Leu Ser Pro
130 135 140
Gly Cys
145

<210> 38

<211> 167

<212> PRT

<213> Rattus norvegicus

<400> 38

Met Cys Trp Arg Pro Leu Cys Arg Phe Leu Trp Leu Trp Ser Tyr Leu
1 5 10 15
Ser Tyr Val Gln Ala Val Pro Ile His Lys Val Gln Asp Asp Thr Lys
20 25 30
Thr Leu Ile Lys Thr Ile Val Thr Arg Ile Asn Asp Ile Ser His Thr
35 40 45
Gln Ser Val Ser Ala Arg Gln Arg Val Thr Gly Leu Asp Phe Ile Pro
50 55 60
Gly Leu His Pro Ile Leu Ser Leu Ser Lys Met Asp Gln Thr Leu Ala
65 70 75 80
Val Tyr Gln Gln Ile Leu Thr Ser Leu Pro Ser Gln Asn Val Leu Gln
85 90 95
Ile Ala His Asp Leu Glu Asn Leu Arg Asp Leu Leu His Leu Leu Ala
100 105 110
Phe Ser Lys Ser Cys Ser Leu Pro Gln Thr Arg Gly Leu Gln Lys Pro
115 120 125
Glu Ser Leu Asp Gly Val Leu Glu Ala Ser Leu Tyr Ser Thr Glu Val
130 135 140
Val Ala Leu Ser Arg Leu Gln Gly Ser Leu Gln Asp Ile Leu Gln Gln
145 150 155 160
Leu Asp Leu Ser Pro Glu Cys
165

<210> 39

<211> 167

<212> PRT

<213> Sus scrofa

<400> 39

Met Arg Cys Gly Pro Leu Cys Arg Phe Leu Trp Leu Trp Pro Tyr Leu
1 5 10 15
Ser Tyr Val Glu Ala Val Pro Ile Trp Arg Val Gln Asp Asp Thr Lys
20 25 30
Thr Leu Ile Lys Thr Ile Val Thr Arg Ile Ser Asp Ile Ser His Met

<210> 45
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<212> PRT
<213> Homo sapiens

<400> 45
Glu Lys Pro Asp
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<210> 46
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<212> PRT
<213> Homo sapiens

<400> 46
Thr Pro Asp Ser Leu
1 5

<210> 47
<211> 9
<212> PRT
<213> Homo sapiens

<400> 47
Gly Leu Gln Thr Leu Asp Ser Leu Gly
1 5

<210> 48
<211> 5
<212> PRT
<213> Homo sapiens

<400> 48
Gly Gly Val Leu Glu
1 5

<210> 49
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<400> 49
Thr Pro Asp Ser Leu Gly
1 5

<210> 50
<211> 9
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<400> 50
Ser Leu Gly Gly Val Leu Glu Ala Ser
1 5

<210> 51
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<400> 51
Pro Glu Ser Leu Gly Gly
1 5

<210> 52
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<400> 52
Pro Asp Ser Leu Gly Gly
1 5

<210> 53
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<212> PRT
<213> Homo sapiens

<400> 53
Leu Gly Gly Val Leu Glu Ala
1 5

<210> 54
<211> 22
<212> PRT
<213> Homo sapiens

<400> 54
Glu Asn Leu Arg Asp Leu Leu His Val Leu Ala Phe Ser Lys Ser Cys
1 5 10 15
His Leu Pro Trp Ala Ser
20

<210> 55
<211> 22
<212> PRT
<213> Homo sapiens

<400> 55
Leu Leu His Val Leu Ala Phe Ser Lys Ser Cys His Leu Pro Trp Ala
1 5 10 15
Ser Gly Leu Glu Thr Leu
20

<210> 56
<211> 22
<212> PRT
<213> Homo sapiens

<400> 56
Ala Phe Ser Lys Ser Cys His Leu Pro Trp Ala Ser Gly Leu Glu Thr
1 5 10 15
Leu Asp Ser Leu Gly Gly
20

<210> 57
<211> 22
<212> PRT
<213> Homo sapiens

<400> 57
Cys His Leu Pro Trp Ala Ser Gly Leu Glu Thr Leu Asp Ser Leu Gly
1 5 10 15
Gly Val Leu Glu Ala Ser
20

<210> 58

<211> 18
<212> PRT
<213> Homo sapiens

<400> 58
Leu Pro Trp Ala Ser Gly Leu Glu Thr Leu Asp Ser Leu Gly Gly Val
1 5 10 15
Leu Glu

<210> 59
<211> 14
<212> PRT
<213> Homo sapiens

<400> 59
Trp Ala Ser Gly Leu Glu Thr Leu Asp Ser Leu Gly Gly Val
1 5 10

<210> 60
<211> 21
<212> PRT
<213> Homo sapiens

<400> 60
Ala Ser Gly Leu Glu Thr Asp Ser Leu Gly Gly Val Leu Glu Ala Ser
1 5 10 15
Gly Tyr Ser Thr Glu
20

<210> 61
<211> 10
<212> PRT
<213> Homo sapiens

<400> 61
Ser Gly Leu Glu Thr Leu Asp Ser Leu Gly
1 5 10

<210> 62
<211> 22
<212> PRT
<213> Homo sapiens

<400> 62
Thr Leu Asp Ser Leu Gly Gly Val Leu Glu Ala Ser Gly Tyr Ser Thr
1 5 10 15
Glu Val Val Ala Leu Ser
20

<210> 63
<211> 22
<212> PRT
<213> Homo sapiens

<400> 63
Gly Gly Val Leu Glu Ala Ser Gly Tyr Ser Thr Glu Val Val Ala Leu
1 5 10 15
Ser Arg Gly Gln Gly Ser
20

<210> 64
<211> 22
<212> PRT

<213> Mus musculus

<400> 64

Glu	Asn	Leu	Arg	Asp	Leu	Leu	His	Leu	Leu	Ala	Phe	Ser	Lys	Ser	Cys
1				5					10					15	
Ser	Leu	Pro	Gln	Thr	Ser										
			20												

<210> 65

<211> 22

<212> PRT

<213> Mus musculus

<400> 65

Leu	Leu	His	Leu	Leu	Ala	Phe	Ser	Lys	Ser	Cys	Ser	Leu	Pro	Gln	Thr
1				5					10					15	
Ser	Gly	Leu	Gln	Lys	Pro										
			20												

<210> 66

<211> 22

<212> PRT

<213> Mus musculus

<400> 66

Ala	Phe	Ser	Lys	Ser	Cys	Ser	Leu	Pro	Gln	Thr	Ser	Gly	Leu	Gln	Lys
1				5					10					15	
Pro	Glu	Ser	Leu	Asp	Gly										
			20												

<210> 67

<211> 22

<212> PRT

<213> Mus musculus

<400> 67

Cys	Ser	Leu	Pro	Gln	Thr	Ser	Gly	Leu	Gln	Lys	Pro	Glu	Ser	Leu	Asp
1				5					10					15	
Gly	Val	Leu	Glu	Ala	Ser										
			20												

<210> 68

<211> 18

<212> PRT

<213> Mus musculus

<400> 68

Leu	Pro	Gln	Thr	Ser	Gly	Leu	Gln	Lys	Pro	Glu	Ser	Leu	Asp	Gly	Val
1				5					10					15	
Leu	Glu														

<210> 69

<211> 14

<212> PRT

<213> Mus musculus

<400> 69

Gln	Thr	Ser	Gly	Leu	Gln	Lys	Pro	Glu	Ser	Leu	Asp	Gly	Val
1				5					10				

<210> 70

<211> 22

<212> PRT

<213> Mus musculus

<400> 70

Thr Ser Gly Leu Gln Lys Pro Glu Ser Leu Asp Gly Val Leu Glu Ala
1 5 10 15
Ser Leu Tyr Ser Thr Glu
20

<210> 71

<211> 10

<212> PRT

<213> Mus musculus

<400> 71

Ser Gly Leu Gln Lys Pro Glu Ser Leu Asp
1 5 10

<210> 72

<211> 22

<212> PRT

<213> Mus musculus

<400> 72

Lys Pro Glu Ser Leu Asp Gly Val Leu Glu Ala Ser Leu Tyr Ser Thr
1 5 10 15
Glu Val Val Ala Leu Ser
20

<210> 73

<211> 22

<212> PRT

<213> Mus musculus

<400> 73

Asp Gly Val Leu Glu Ala Ser Leu Tyr Ser Thr Glu Val Val Ala Leu
1 5 10 15
Ser Arg Leu Gln Gly Ser
20

<210> 74

<211> 67

<212> DNA

<213> Artificial Sequence

<220>

<223> oligonucleotide Chimeric oligonucleotides

<400> 74

atgcaacagg acggacttgg agtagttttc uacuccaagt cagtccuguu gcaugcgcgt 60
ttcgcgc 67

<210> 75

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> oligonucleotide Forward Primer

<400> 75

tgtccacgtc gtttacgctc 20

<210> 76

<211> 20
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> oligonucleotide Reverse Primer

 <400> 76
 tcccacttcc gttccttgtc 20

 <210> 77
 <211> 27
 <212> DNA
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 <220>
 <223> oligonucleotide Probes endogenous/mutant

 <400> 77
 cctactccaa gtcmgctctg ttgcatt 27

 <210> 78
 <211> 67
 <212> DNA
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 <220>
 <223> oligonucleotide Chimeric oligonucleotides

 <400> 78
 gaccctgccc tgtacctacc taccagatgt tttcaucugg uagggttcagg gcagggucgc 60
 gcgtttt 67

 <210> 79
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 <212> DNA
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 <220>
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 <400> 79
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 <210> 80
 <211> 19
 <212> DNA
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 <220>
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 <400> 80
 ccagatgacg atgggttgc 19

 <210> 81
 <211> 25
 <212> DNA
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 <220>
 <223> oligonucleotide Probes endogenous/mutant

<400> 81
 accctgccct gwcctaccag atgac 25

<210> 82
 <211> 68
 <212> DNA
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<220>
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<400> 82
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 ttctgcgc 68

<210> 83
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
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<400> 83
 gagctcatcg tccttgggag 20

<210> 84
 <211> 19
 <212> DNA
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<220>
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<400> 84
 agtcttctat gggccccgc 19

<210> 85
 <211> 27
 <212> DNA
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<220>
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<400> 85
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<210> 86
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<220>
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<400> 86
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 ttctgcgc 68

<210> 87
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 <212> DNA

<213> Artificial Sequence

<220>
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<400> 87
 acgcagagct catcgtcctt 20

<210> 88
 <211> 20
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> oligonucleotide Reverse Primer

<400> 88
 gatgcccagg aggaggaaga 20

<210> 89
 <211> 23
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> oligonucleotide Probes endogenous/mutant

<400> 89
 caacaccata ckgaccgacg gaa 23

<210> 90
 <211> 18
 <212> DNA
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<220>
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<400> 90
 acgcatggga atcatggc 18

<210> 91
 <211> 18
 <212> DNA
 <213> Artificial Sequence

<220>
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<400> 91
 taggggtgag cggcgggg 18

<210> 92
 <211> 21
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> oligonucleotide Zinc finger nuclotides of SEQID1

<220>
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 <222> 10..12

<223> n=a, g, c or t

 <400> 92
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 <210> 93
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 <220>
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 <220>
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 <222> 10..11
 <223> n=a, g, c or t

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 <210> 94
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 <210> 95
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 <220>
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 <222> 10
 <223> n=a, g, c or t

 <400> 95
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 <210> 96
 <211> 18
 <212> DNA
 <213> Artificial Sequence

 <220>
 <223> oligonucleotide Zinc finger nuclotides of SEQID1

 <400> 96
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 <210> 97
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 <212> DNA
 <213> Artificial Sequence

<220>
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 <210> 98
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 <400> 98
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 <223> n=a, g, c or t

 <400> 99
 agggctgggn nnaggggtga g 21

 <210> 100
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 <220>
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 <223> n=a, g, c or t

 <400> 100
 aggggtgagn nncggggagg g 21

 <210> 101
 <211> 18
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 <220>
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<400> 101 aagtgggtct cggttgca	18
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<220> <223> oligonucleotide zinc finger LSR sequences	
<400> 102 aaggtcgcct atggtgcaga c	21
<210> 103 <211> 20 <212> DNA <213> Artificial Sequence	
<220> <223> oligonucleotide zinc finger LSR sequences	
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<210> 104 <211> 18 <212> DNA <213> Artificial Sequence	
<220> <223> oligonucleotide zinc finger LSR sequences	
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<210> 105 <211> 20 <212> DNA <213> Artificial Sequence	
<220> <223> oligonucleotide zinc finger LSR sequences	
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<210> 106 <211> 19 <212> DNA <213> Artificial Sequence	
<220> <223> oligonucleotide zinc finger LSR sequences	
<400> 106 gtggctgcac aaggtcgcc	19